

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 54 WALL STREET, NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, Vol. V., No. 36] SATURDAY, SEPTEMBER 8, 1849. [WHOLE No. 698, VOL. XXII.

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*
M. BUTT HEWSON, C. E., *For Civil Engineering.*

PRINCIPAL CONTENTS.

Iron Ores and Iron Manufacture—N.Y.	559
Railroads in Massachusetts	562
“ New Hampshire	562
“ Vermont	562
“ New York	562
North Branch Canal	562
James River and Kanawha	562
Wilmington and Manchester Railroad	563
Railroads in Georgia	563
“ Tennessee	563
“ Alabama	563
“ Ohio	563
“ Illinois	564
Russian Railroads	564
Locomotive for Common Roads	564
Railway Law	564
Value of Property as Affected by Railroads	564
Institution of Mechanical Engineers	565
Electric Telegraph	565
Old Colony Railroad	566
Railroad to the Pacific	567
Portland and Montreal Railroad	567
Railroads in Georgia	567

AMERICAN RAILROAD JOURNAL.

PUBLISHED BY J. H. SCHULTZ & CO., 54 WALL ST.

Saturday, September 8, 1849.

Iron Ores and the Iron Manufacture of the United States.

Continued from page 544.

NEW YORK

In Clinton county there were formerly two blast furnaces belonging to the Peru Iron Company at Clintonville. The ores not working well, however, in this mode, the furnaces were abandoned, and the company directed all their attention to the process of reduction by the bloomery fire. Their establishment has grown to be the largest in the country, containing under one roof twenty-one fires and one oven for re-heating the blooms, which is heated by the gas and hot air from the other fires. These meeting in the oven, or by the bridge, which corresponds to that of a puddling furnace, a vivid combustion takes place, producing intense heat, with great economy of fuel. These works have been successfully conducted for many years by Mr. J. B. Bailey for Messrs. Saltus & Co. of New York city.—The bar iron stands well in the market, and is ex-

tensively used for the manufacture of nails, for which it is particularly well adapted. For articles exposed to the action of sea water, as chain cables, anchors, etc. it is not so well suited, the iron having a singular tendency to oxidize more rapidly, than iron made from hematites and some other ores.

The mines, that have supplied these fires, are along the range of hills bordering the Ausable river. The most important among them are the *Arnold*, *Palmer and Winter*, the two former of which have supplied also a number of other forges. Charcoal, which has for some time past been growing scarce, is now worth at these fires, about seven cents a bushel.

A description of these mines, and of the forges dependent upon them, as well as of numerous other forges scattered throughout the counties of Clinton and Essex, of which I have now but an imperfect list, will be deferred for the present, until my data shall be more complete. The continuity of the account of the blast furnaces also by this arrangement will not be broken in upon.

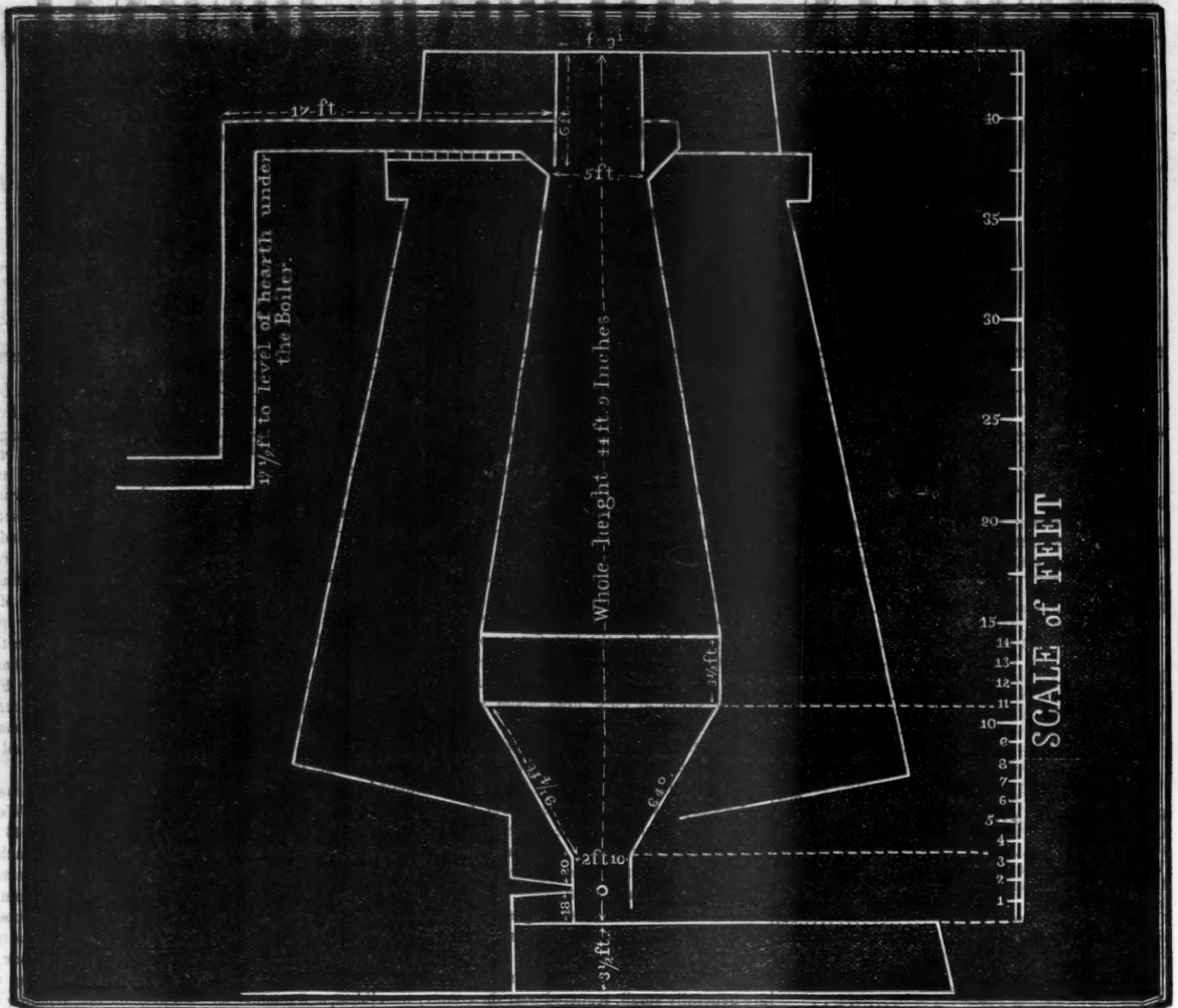
Of the business of these forges I would merely make a few remarks as to its character and importance. It is so extensive, that it creates a market for about 50,000 tons of ore per annum. The works are generally small, scattered over the country near the various mines. The principal portion of the inhabitants are directly dependent upon it; the only employment not closely connected with it being lumbering, for which the fine forests of this region afford abundant material. In the long winters when nothing can be done in farming, the farmers find a busy occupation for themselves and their teams in drawing in the supplies of charcoal, wood and of ore. At this time the roads, covered with deep snow, are in the best order for hauling heavy loads, and new ones are easily opened through the woods and over the roughest ground by merely clearing out the brush. The works in general involving little capital, are put up by men of moderate means, and in remote places; while the iron made in them, being a refined article, can pay a rate of transportation to market, that would be ruinous to blast furnaces making the cheaper pig metal. It is principally, I believe, for this reason that so much more forge iron is made in this region than the pig metal;—but there is also another reason, which is the prevalent impression, that these ores work to better advantage in the bloomery fire, than first in the blast and then in the puddling furnace. The im-

pression formerly prevailed that the Port Henry ores could only be worked into malleable iron, and though several blast furnaces have since run wholly with them, it must be admitted that the pig metal they have produced is more suitable for foundry iron than for refining. These forges produce iron of different qualities—some of it is highly esteemed for its strength and softness; but the generality of it brings a less price in the cities, than the bar iron made from the best hematite forge pig; while this sometimes sells for \$100 per ton, the Lake Champlain iron of the same finish brings only about \$75. A great portion of it is used in the country for a variety of purposes; a considerable quantity is made into nails at the nail factory at Keesville and at another in Clintonville.

Siscoe Furnace.—This is the first blast furnace south from Franklin county. It was built at Westport, on the shore of Lake Champlain in 1846 by Francis H. Jackson, Esq., of Boston. The stack is 44 feet and 9 inches high and about 13 feet across the boshes. It is substantially constructed, and is well provided with all the modern improvements.—An outline representing its form accompanies this description. Being built directly upon the dock, a powerful steam engine is provided for raising the blast, and another for stamping the ore, grinding the flux, sawing wood and hoisting materials to the tunnel head. The boilers are four in number, all 40 inches in diameter; two are plain boilers 37 feet in length, set just above the hearth, which is 17 feet below the filling plate; the other two, 27 feet long, have each two flues of 14 inches diameter passing through them. They are set at a little lower level, so that the gases and atmospheric air (let in to ignite them), passing along under the two first boilers, enter these flues on a level, and also pass under the second set of boilers, effectually heating every portion.

The gases used to heat the boilers, as well as the blast in the hot air chamber, are taken out six feet below the filling plate, around the outside of the cast iron cylinder, which forms the tunnel head;—from this it is led off in a brick flue, 3 feet wide and 16 feet high. When the furnace was new, the gases were taken out only two feet below the filling plate. Explosions then occurred under the boilers, which threatened the most serious consequences—by one of them the strong iron frames supporting the boilers, and the brick wall it was built into, were thrown out of place.

Sisco Furnace, Westport.



For the hot air chamber the gases pass upwards through rows of holes in the roof of another flue connected with the same space around the cylinder in the top. Thus admitted and combining with the oxygen of the atmospheric air, they circulate around in waves of flame and heat the blast pipes.

The blowing cylinders are two in number—of cast iron, five feet diameter and six feet long. They blow from 2,500 to 2,900 cubic feet of air per minute.

The ores, which this furnace was designed to use, are found in large quantities within three miles. They are good looking magnetic ores, and bear a close resemblance to those of Orange county, used by the Messrs. Townsend, and also to those of Adirondac, which are found to be so well adapted for the manufacture of steel. Analyses were made of them by Mr. Hayes, without detecting any ingredients, that threatened to cause difficulty in working them. They were peculiar only in containing a few per centum of chromic acid. For more than a year, however, they were found extremely refractory in the blast furnace, working precisely like the

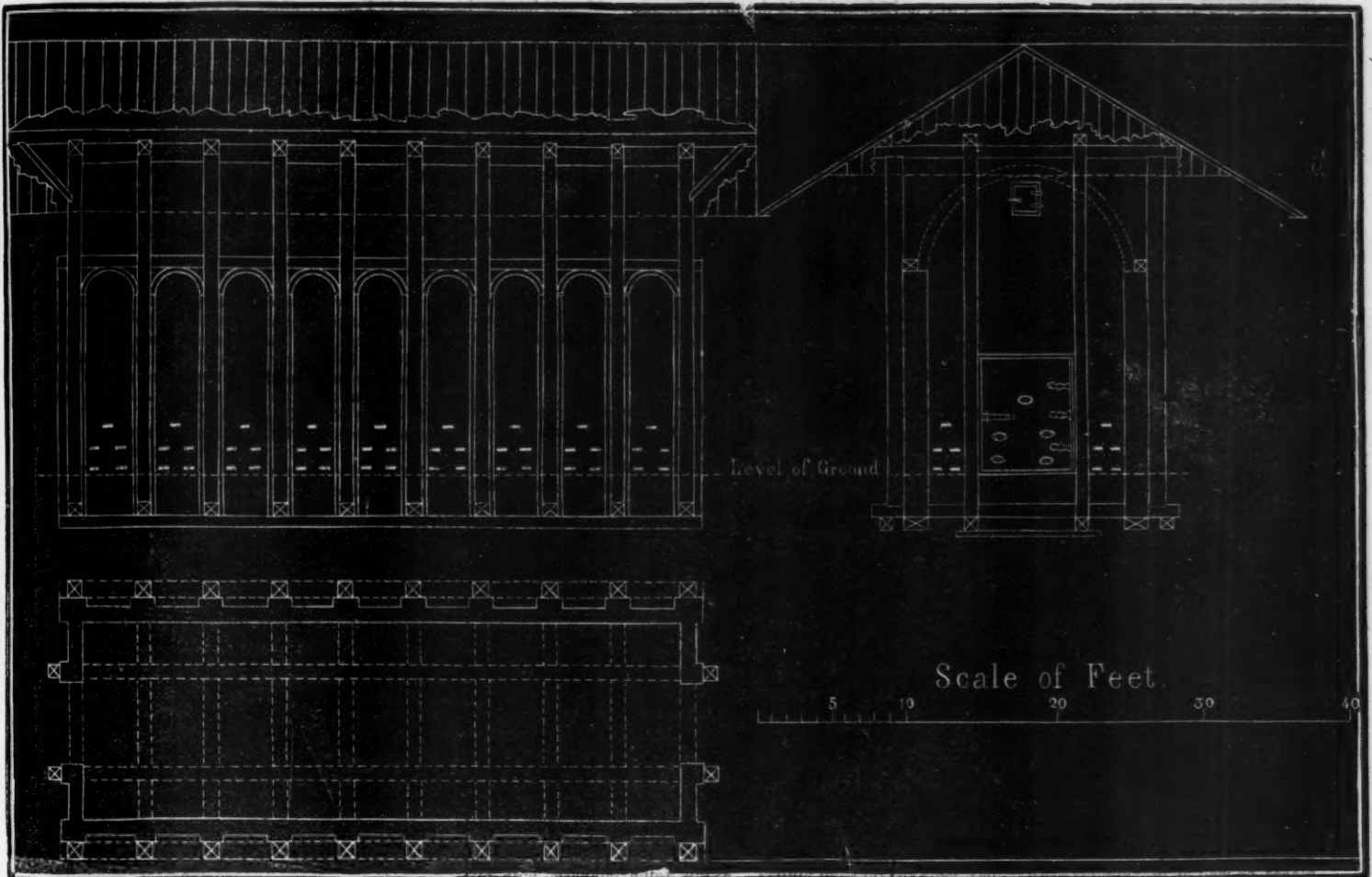
Adirondac ores, a description of which will be given farther on. Under the most skilful management, that could be procured in the country, no free running cinder could be got; and several times was the furnace chilled. The iron separated with difficulty, and in its hardness and silvery lustre, resembled the iron of the Adirondac works, as also that made at the Duane Furnace, in Franklin county. Cold chisels of tolerable quality were made from it ground down directly from the pig. On account of the refractory nature of the ore, it was found expedient to use it in the proportion of one-third, mixed with other magnetic ores, and with the hematites of Colchester, Vt. From the abundance and cheapness of the ore, the bed will continue to be an important source of supply to the furnace. It is known as the Siscoe bed. With these mixtures the furnace has since worked successfully, turning out over 8 tons of iron a day. The cinder is of a proper consistency, and flows freely. The heaps of it lying about the furnace are in great part composed of a beautiful glass of many shades of colors.

The price of the ores varies with the locality which

furnishes them. The Cheever bed ore of Port Henry costs on the lake shore 80 cents a ton, and 25 cts. more will cover all expenses of taking it to Westport. To this must be added the mine rent, which is not established at any particular sum.—Since the Port Henry works ceased operations, there have been no sales of this ore to any amount. It has formerly been sold from 1 75 to \$3 on the lake shore. The Moriah ores have cost on the dock at Westport from 1 75 to \$3 50, the usual amount paid not exceeding \$2. Of these ores (including the Cheever) it takes less than 14 tons to make a ton of pig iron. The Siscoe ore can be delivered at the furnace for considerably less than \$1 50 per ton, probably for \$1 10; the former sum, however, is admitted in the estimate.

The woodlands, which supply the furnace, are owned by the proprietors of the works. They are in the interior a few miles back from the lake. No wood has yet been brought by water, as it is to the Port Henry furnaces. The supplies are all of hard wood, and their cost is about \$2 per cord, delivered. Connected with the furnace are eight of the best

Engraving, Representing the Form of Kiln used in Making Charcoal.



class of kilns, which keep the furnace supplied with charcoal. Railroads are laid to convey wood from the sheds to them, and 1000 feet of railroad connect the kilns with the furnace. Mr. Jackson has had much experience with the kilns both here and at Port Henry; and I know of no other person who has given such close attention to their management.* With the labor of 330 days at seventy-five cents a day, and of one collier at two dollars per day, he has made per month 48,000 bushels of coal and delivered it in baskets to the filler at the tunnel head. In this 210 days' work were employed in filling and 120 days' work in emptying and delivering at the furnace top—this being carried on night and day. The kilns hold 56 cords of wood each; and a common yield is 56 bushels of charcoal to the cord. By the common mode of burning in pits in the woods, 100 bushels from three cords is more than an average yield. The kiln-coal is not so highly esteemed by some persons, as the pit coal, probably from the prejudice bloomers have against it for its burning too freely, as slow burning coal is better adapted to their purposes. If this were moistened

* In consequence of the poor impression which was obtained of the cut of the kilns for charcoal in a previous number, we now insert the figure again, which represents as well the kilns of Mr. Jackson as those of Massachusetts, the former being perhaps better secured by braces and cross timbers. As the plan is drawn to a scale, and is sufficiently exact for building from, it seemed important that it should be at least plainly printed. The door near the top of the arch is for filling in the upper layers of wood, which is done from a moveable pulpit or platform or a fixed inclined plane.

by steam or otherwise or kept till it acquires moisture, and then tried without prejudice, it would probably be found to work as well as charcoal burned in pits. For use in blast furnaces there can be no question as to its superiority both in quality and economy in handling. It ought to be made always from seasoned wood—at least ten bushels more per cord being produced than from green wood; and it ought also to be used directly after it is taken from the kilns. To prepare the wood for the kilns Mr. Jackson has provided 40,000 square feet of sheds capable of housing 6,000 cords of wood. The kilns are built in the most substantial manner, and kept so tight as never to require the use of water or steam for extinguishing the fire. A mortar of clay is judged to be more suitable than of lime for laying the brick, calcareous cements being more rapidly acted on by the pyroligneous acid expelled from the wood in the process of charring.

Mr. Jackson has made careful experiments with the 'charbon-rouge' or red charcoal, so strongly recommended in some articles in the *Annales des Mines*, for its superiority in calorific power and in economy to the common black, thoroughly charred coal. He succeeded in stopping the process at the right point to procure this red coal in quantity; but according to his experience the extra labor, required to saw the long pieces, more than counterbalanced its superior quality. To saw wood with a circular saw running by machinery, he found the expense to be as great, including in this taking the wood to the saw and then to the furnace, as to char the wood and then take the coal to the furnace.

The consumption of fuel to the ton of iron, during the larger part of the year 1847, was 130 bushels of coal, 26 bushels of brands and one-third of a cord of wood. For the month of July 1848—128 bushels of coal, 13 bushels of brands and one-quarter of a cord of wood. A cord of brands is reckoned 80 bushels.

The product of the furnace is mostly iron better adapted for foundry, than forge purposes. It cannot be classed among the higher priced irons; and when the market is low, it cannot sell to profit in New York after paying commissions and the freight of \$3 per ton. Still it has taken a fair stand, and has a considerable sale in New York for the puddling furnace.

As this establishment is one of the most thoroughly built and best provided with every thing required about a first class furnace, it will be interesting to give a general account of its cost, which may be found useful for reference in projecting other works of the kind:

Furnace stack, including the steam engines and boilerers, machine shop, engine house, casting house, top house, cisterns, blowing apparatus, 2 sets of hot blast pipes, coal houses, etc.....	\$28,163 13
Dock, 500 feet front.....	869 95
Office and stable.....	750 00
3 kilns, sheds for wood, and railroads..	10,730 50
Blacksmith's and carpenter's shops, (two large stone buildings).....	1,285 00
14 dwelling houses for laborers, one larger one for founder, all built in sub-	

stantial manner and well finished....	4,511 42
Clerk's house, of brick.....	1,515 00
Agent's house and outbuildings.....	3,900 00
School house.....	478 76
185 acres of land*.....	2,700 00
Total.....	\$54,903 78

The estimated expense of making a ton of pig iron is as follows:

Ores, including half a ton Siscoe \$0.75; three quarters of a ton of Hematite \$1 50; other magnetic ores half a ton 1.87.....	\$4 12
Charcoal, including brands and wood, say 160 bush. @ 54 cents.....	8 40
Flux 20 cts.; Labor \$2 50.....	2 70
Repairs, Superintendence and Interest.....	3 00
	\$18 22

In visiting this establishment one cannot fail to be struck by the natural beauty of the place, and the taste displayed by Mr. Jackson in the plans and arrangements of the buildings and grounds. The houses for the workmen are separate from each other, of small size, and of graceful, simple style. Each is provided with a small enclosure of ground, and with many conveniences designed to make comfortable and agreeable the homes of those, who are to aid in carrying on the business of the place. A little additional expense in this way is more than repaid in the satisfaction it affords the better class of workmen, and the consequent hold to retain them. At the same time it serves to cultivate among all classes a more refined taste, which, while it leads them to adorn the objects around them, increases their interest in these objects and their efforts for their prosperity. Our manufacturers engaged in building up establishments of various kinds in all parts of the country—in the retired nooks and by places, as well as in populous towns—may control, if they please, the national style of architecture. They are responsible for some attention to this subject. But when we see it wholly neglected, as is too often the case—when some most picturesque site by the falls of a mountain stream, or on the banks of a smooth lake, is made hideous by uncouth and uncomfortable structures, around which accumulate unwholesome piles of dirt, that are never removed, we cannot but regard the manager, not merely deficient in good taste, but also in true economy. H.

Massachusetts.

The Manchester and Lawrence Railroad.—We understand that the work on this road is progressing. The grading is all done except for a short distance to Windham. The rails have been laid for some four or five miles from each terminus of the route, and it is expected the whole will be completed in six or eight weeks.

Methuen Branch Railroad.—The branch of the Boston and Maine railroad, between Lawrence and Methuen, was opened for public travel yesterday.

New Hampshire.

Portsmouth and Concord Railroad.—At the adjourned meeting of the stockholders, held at the Court House, in this town, on Wednesday last, a Committee of three was appointed, consisting of Messrs. A. B. Vennard, John Drake, and Brackett Hutchings, to nominate a Committee of five, whose duty it shall be to examine the subscriptions, and make out a list of stockholders in the Road, with the number of shares belonging to each, and report the same to an adjournment of the meeting. The

* This land does not include the ore bed. The lot on which it is cost \$2,000, but land and wood have been sold from it to the amount of \$1,850, leaving the present cost of the bed and fifty acres connected with it only \$150.

following persons were reported, and appointed a Committee for the above purpose:—Messrs. Ichabod Collins, Augustus Jenkins, and Peter Jenness, of Portsmouth; William Plumer, of Epping, and Theodore French of Concord.

It was stated at the meeting that the Road is progressing. Arrangements are making which will doubtless result in the erection of a commodious Depot for the mutual benefit of the Eastern and Concord Railroads, west of the distillery lot,—and to extend the Concord Road to the water by the side of the Eastern Railroad.

The meeting was adjourned to Friday, the twelfth of October, to be held at the Court House, in this town, at eleven o'clock, A. M.—*Portsmouth Journal*.

Rhode Island.

We find it stated that Rhode Island has within her limited territory 163 cotton mills, consuming annually, 560,000 bales of cotton, and manufacturing 70,000,000 yards of cloth.

Vermont.

Ashuelot Railroad.—The following speculations upon railroad connections up to the Connecticut valley, are from the Hartford Courant:

The route surveyed from Brattleboro' to Bellows Falls, Vt., is 28 miles, and estimated to cost \$800,000. An attempt is now being made to secure means to construct the line, and a very liberal share of the stock will be taken by the New York and New Haven company, if the Brattleboro' influence can secure the remainder during the present month. May the effort succeed!—The route surveyed from the termination of the Connecticut road at South Vernon, up to the Ashuelot Valley to Keene, is 22 miles, there connecting with the Cheshire railroad now, and in early prospect with a line from Keene to Concord, through the central towns in New Hampshire, is estimated to cost only \$300,000, but may cost \$500,000 more. The Ashuelot company is now organized, has secured the right of way over the entire route a large proportion of the land being without charge, and has raised over \$100,000 of the capital stock on the line. If \$200,000 more can be secured by the several interests between New York and South Vernon, the company will build the road in the best manner, and pay for it without further aid from abroad. As this route connects with all the Northern lines by way of Keene, and is less than thirty minutes further travel than the direct route will be from Bellows Falls to Brattleboro', where it will furnish the large addition of travel of Cheshire County, and the central travel from all New Hampshire, and the large and increasing freighting business from the manufacturing towns in the Ashuelot Valley, and costing but one third the amount, why should it not have the favorable notice and aid of all parties most interested? It will certainly cause much larger revenue, while it will cost very much less. Beside, the Ashuelot route will bring this way an immense amount of trade and business which can never come by any other railroad.

New York.

Buffalo and State Line Railroad.—During the past week the engineers, who are engaged in making some preliminary surveys on the contemplated line of this road, were in this place, and we understand report the line from this place to Buffalo, as not only practicable, but offering unusual facilities for the prosecution of such a work.

To persons who are acquainted with the topography of the country, this is no more than what was expected. But as some of our more distant readers may not have had the advantage of knowing personally, the situation of the country, we would remark that along the southerly shore of Lake Erie there is a plain of some four miles in width, lying between the lake and a chain of highlands, which divide the waters of the valley of the lakes from those of the valley of the Mississippi and its tributaries. This plain between the base of the hills and the lake, has an average inclination towards the lake of about six feet to the mile, and is crossed by small streams passing from the high sides to the lake, but few of them of sufficient magnitudes for the purpose of water power, for mills, except during the more rainy seasons of the year; the Cattaraugus Creek is the only streams which break through the ridge, or is

of much magnitude, between Buffalo and the line of the state of Pennsylvania. It will be crossed near the village of LaGrange, and affords no very great obstacles in passing it with a railroad.

Along this plain, and much of the distance on a gravel ridge, about one hundred and fifty feet above the lake—which evidently at some former period was the bank of the lake—runs the present highway, and near it is the line of the contemplated railroad. At no point will it be required to be of an elevation of over about one hundred and fifty feet above Lake Erie, will run on a line without any short curves, and on a grade of but few feet elevation to the mile. It will be seen from this description that there are very few countries where a railroad can be more cheaply and easily made. During the season of interception of navigation of our great lakes, the present highway has afforded almost the only mode of communication between the Northwestern and Atlantic States, and the railroad when completed must always be the great channel of communication between these states, and in a few years one of the principal thoroughfares between the Atlantic and Pacific coasts of the United States.

It cannot be otherwise than that the stock in this road will be one of the most profitable investments which the capitalist can make, or that a public work so much required, and by so great an extent of country, can fail of being very shortly completed.—*Frederickian Express*.

Hartford and Fishkill.—We understand that a survey of a route for a railroad between Hartford and Fishkill on the Hudson, opposite to Newburg, is now in progress. The object of this road is to open a communication between Boston and the New York and Erie road.

New Jersey.

An official report of the Camden and Amboy railroad company states that during a period of 17 years past, the number of persons killed on the roads of that company was 20. Upon all the railroads in Massachusetts there were killed, in 1847, forty-four persons; and in 1848 fifty-six persons.

Pennsylvania.

North Branch Canal.—The Harrisburg Keystone states that the proper officers of the Commonwealth of Pennsylvania are now preparing a report to ascertain whether there will be any money in the State Treasury this year, applicable to the completion of the North Branch Canal. The Keystone remarks:—

"We know not what the result may be, but apprehend that in consequence of the diversion of about \$200,000 to the sinking fund, there will be nothing left for the canal this year. Should the sinking fund be suspended, and the revenues improve as they ought to be, we believe \$700,000 may be appropriated next year.

The importance of this work to Pennsylvania will be readily seen when it is remembered that it will, when completed, connect the public works of that State with those of New York, and of course with the Northern Lakes, opening a market for the sale of Anthracite Coal, iron, etc. The estimates for completing this important work reach only \$1,200,000.

Virginia.

James River and Kanawha Company.—The board of directors of this company, says the Richmond Enquirer of the 24th, yesterday concluded the examination of the bids for the heavy works to be constructed by them. The successful contractors are, we hear, mostly from Pennsylvania. We subjoin a memorandum of the works, and the names of the contractors.

TIDE-WATER CONNECTION.

Section 1, and the walling on the dock, was let to Mordecai Sizer, of King William county, Virginia.

The important ship lock to connect the Richmond dock with James river section No. 3, was let to George M. Lanman of Penn.

Proposals of Bernard McGann, of Pennsylvania, for the five locks and section No. 2 was accepted.

SOUTH SIDE CONNECTION.

Proposals of M. Robertson & Co., for the superstructure of the bridges at Canton and Hardwicksville, was accepted. Also, the proposals of John

McQuaid, for dam, lock, and connecting canal at Pemberton.

RIVANNA CONNECTION.

The following proposals were accepted, viz:—Charles Scott for guard lock and dam; J. M. Spiller for sections Nos. 1 and 2; George L. Seay for section Nos. 3 and 4; Robert Richardson for culverts on No. 4; Charles B. Quisenbury, of Campbell county, Va., for bridges.

The above works have been let on very fair terms, as we hear. They will be completed, it is thought, in two years.

Richmond and Danville Railroad.—The whole of this work, with the exception of the last 29 or 30 miles, is under contract, and the Danville Register thinks there is a strong probability of the remaining portion being let in a few weeks. Col. Geo. Townes has concluded a contract for the grading and masonry of the last section, if he can succeed in getting persons to join him in taking the amount of stock necessary, twenty-five thousand dollars. The Colonel himself takes ten thousand, leaving only fifteen thousand to be taken. If he succeeds and the register has no doubt of it, he will at once place 150 hands on the road, commencing at Danville, as soon as it can be located by the Engineers.—*Enquirer*.

North Carolina.

Wilmington and Manchester Railroad.—On Wednesday last (says the *Sumterville Banner* of the 22d ult.), the people of Sumter came up nobly to the support of the Wilmington and Manchester road. A large and highly respectable mass meeting was held at the Court House. On motion, Col. J. J. Moore was called to the Chair, and R. M. Dyson and W. F. B. Haynesworth, Esqrs., appointed Secretaries. Hon. F. J. Moses, in a few pertinent remarks introduced to the meeting the President of the Road, Gen. Harllee, of Marion, who, though constrained to limit his address for want of time, laid before the assembled multitude a clear energetic statement of the resources, availabilities and benefits of the Road, and produced such a mass of statistical evidence, that if there was no sceptic as to the whole enterprise, he would, most assuredly, have been converted. But from the well known intelligence of this District we do not sincerely believe that there is a single individual to be found, who is opposed to the Road. The following resolutions were then submitted and adopted.—*Wilmington Chronicle*.

Resolved, That the citizens of Sumter still feel a lively interest in the establishment of the Wilmington and Manchester Railroad, and look to its completion as the great work which is to facilitate communication from one extreme of the Union to the other.

Resolved, That the thanks of the community are due and hereby tendered to the Board of Directors for the energy, ability and industry which have characterized their actions.

Resolved, That this meeting tenders its acknowledgements to Gen. Harllee, for the eloquent address with which he has favored us to day and his satisfactory statement of the condition and prospects of the Company.

Resolved, That this meeting with all becoming courtesy and deference to the Board, recommend that the progress of the work be continued with all the means and power they can command.

Resolved, That the proceeding be published in the *Sumter Banner*, *Marion Star*, the *Wilmington papers*, and such Journals throughout the States as are interested in the enterprise.

The meeting then adjourned to make further subscriptions and attend to the letting of the contracts.—The sum of \$60,000 was subscribed and all the timber contracts were taken for stock. The whole comprising forty miles, and from the indomitable spirit and industry of the contractors we have every assurance to believe that the forty miles of road will be in running order by the first of October 1850. The books for further subscriptions to this capital stock of the Company are now open at Capt. Blanding's office in the rear of the Court House. The several grading contracts in the vicinity of this town are partly completed.

Wilmington and Raleigh Railroad.—Some eight or nine weeks since, Dr. A. J. DeRusset, Jr., of this town, left for England for the purpose of purchasing T iron to relay the track of the Wilmington and

Raleigh railroad. The pleasing intelligence has been received that he had succeeded in contracting on favorable terms for 8000 tons, enough to iron about 100 miles of the road, to be paid for, for the present, in bonds of the company, secured by a mortgage on the road and its appurtenances. This operation opens bright prospects for the interests of this enterprising and never tiring company.—*Wilmington (N. C.) Chronicle*.

Georgia.

Receipts for Travel on W. and A. Railroad, from June 15 to July 23 both inclusive for the years 1848 and 1849.

1849	\$4,483 82
1848	4,203 69

\$280 13

The cheap fare commenced this year on the 15th June, and the above statement shows how it is working compared with last year. It may be well enough also to observe, that last year the pleasure tickets, as the cheap rates were called, were paid for both ways in advance, but that all the travel which has gone up now must pay its way back; so that the prospects for increased receipts is very flattering, and must be gratifying to the officers of the road, who first suggested and adopted the three cents rate, as well as the travelling public who enjoy the benefit.—*Atlanta Intelligencer*.

The Burke County Railroad.—We are happy to learn, that there is now every probability, that the necessary funds for the construction of the above road, are likely to be raised without delay. The city corporation of Savannah, has subscribed \$200,000, and the citizens will probably raise \$150,000 by private subscriptions. The Board of Directors of the Georgia Company, have recommended their stockholders to subscribe \$100,000. This makes \$450,000. The road and equipments, will probably cost \$525,000. This leaves only \$75,000 to be raised by the people of Burke. A railroad convention for this purpose is to be held at Waynesboro, on the first Tuesday of September, and we have no doubt that the deficit will be promptly made up by the liberal and wealthy citizens of that country.—*Jour and Mess*

Tennessee.

It is proposed to hold an *Internal Improvement convention* in the town of Greenville on the 10th Sep. next. The object of this convention is, to take into consideration such measures as may be necessary to secure the charter of the East Tennessee and Virginia Railroad—to secure a subscription of stock by the State, to improve the rivers of East Tennessee and co-operate with other internal improvement companies throughout the State. The object of the Convention is certainly a most noble one. Nothing will contribute more to the union of the different parts of the State than a judicious system of internal improvements. Such a system of inter-communication, will have a strong tendency to do away the sectional feeling and prejudices which unfortunately exist.—*Nashville Banner*.

Nashville and Chattanooga Railroad Subscription.

"Among the subscriptions to this work is one of half a million by the city of Nashville, and we now learn that the President and one of the directors of the company, acting as commissioners, a few days since, negotiated in New York \$300,000 of the Nashville six per cent bonds taken for the subscription.—The rate is understood to be 88½ per cent, the bonds being coupon of \$1,000 each, interest payable April and October, at the Phenix bank, New York. The successful bidders are reported to be Messrs. Corcoran of Washington, E. Riggs, Camman and Whitehouse, Ward and Co., of New York, and Charnley and Whelen, of this city. The bonds were yesterday placed on the books of the Philadelphia stock board."—*Philadelphia Ledger*.

East Tennessee Railroad.—The friends of this enterprise will be pleased to learn that the work is going on rapidly. The late favorable weather has enabled the contractors on this end of the line, to make astonishing progress with their work. Three months ago, not a spade had been stuck into that portion of the road lying in Georgia. About four miles of the road is now graded, and ready for the superstructure; and the timber is on the ground ready for laying down. The spirit and enterprise of those connected

with it, together with the means they have at their command, is obligated to overcome all obstacles.—*Mountain Eagle*.

Alabama.]

Mobile and Ohio Railroad.—The prospects of the speedy construction of this road, connecting the mouth of the Ohio with the Gulf of Mexico appear to be still increasing. The *Mobile Tribune* remarks to its Mississippi friends that Mobile is steadily moving forward in the work, and makes no other calculation than to build her part of the road in the shortest possible space of time. Ground will soon be broken, after which the work will be pushed with such vigor that full confidence in that city's earnestness will be established along the whole line.

As regards the first section of the road, the *Tribune* says it traverses an almost unbroken pine forest.—The surface is most level, and is thought very favorable for a railroad. Many persons suppose, judging from the character of the country, that all this distance will be unproductive to the company. This is a great mistake. The elements of much wealth exist there, and as soon as that section of the road is built they will be developed. A large business will soon grow up in navy stores and lumber; and for an extensive trade in bricks no region is better adapted, there being numerous and large beds of the best quality of clay, with an abundance of water and fuel at hand. When the railroad is in operation, the wonder will be with many that the country was so little appreciated.—*Cairo [Ill.] Delta*.

The *Mobile Register* states that 26 miles of this road have been put under contract. It is to be graded and timbered, and put in a condition to receive the iron rails, at a cost of about \$160,000. The gentlemen who have taken the contract, will bring a force of five hundred men on the ground by about the 20th of September, and prosecute the work with energy to its completion.

Ohio. AN ACT.

To authorize the Commissioners of Scioto and other counties to subscribe to the capital stock of the Scioto and Hocking Valley Railroad Company.

SEC. 1. Be it enacted by the General Assembly of the State of Ohio, That the Commissioners of Scioto Pike, Ross, Pickaway and Licking counties, be, and they are hereby authorized to purchase stock in, or make subscription to the capital stock of the Scioto and Hocking Valley Railroad Company to any amount not exceeding one hundred thousand dollars; and the stock so purchased or subscribed shall be under the control of the country commissioners of the above named counties, in all respects as stock owned by individuals.

SEC. 2. That for the payment of said purchase or subscription, the commissioners of the aforesaid named counties, are hereby authorized to issue the bonds of said counties in sums not less than one hundred dollars each payable at such times and places, with such rate of interest, not exceeding seven per cent, per annum as they may think proper.

SEC. 3. No bond shall be issued, or any purchase or subscription made under the provisions of this act, whereby any debt shall be created or money appropriated, by said commissioners, to pay any such subscription or purchase, unless a majority of the legal voters of said county, shall vote for the same; and the county commissioners of said county shall give at least thirty days' notice to the qualified electors thereof, by publication in a newspaper of general circulation in said county, requiring said electors to vote at the annual spring or fall elections, for or against the subscription which they shall propose to make; and the opinion of said electors shall be expressed on their ballots, "for subscription," or "against subscription," and counted and returned by the judges and clerks of elections as in other cases; Provided, however, that the said commissioners may call a special election for that purpose at any time between the spring and fall elections, by giving the notice hereby required.

JOHN G. BRESLIN,
Speaker House Reps.
BREWSTER RANDALL,
Speaker of the Senate.

March 15, 1849.

Central Ohio Railroad Meeting.—The annual meeting of the stockholders in this Company was held in this place to-day. A very satisfactory report was submitted by the President, after which some resolutions were adopted, one of which reads as follows:

Resolved, That the Directors of this Company be and they are hereby instructed to proceed with the survey and location of the road from Zanesville to Columbus as soon as practicable, and for this purpose that they employ a competent engineer and proper assistants on the best terms they can.

The election of thirteen Directors for the ensuing year was then held, and resulted in the choice of the following named gentlemen:

Muskingum County.—John H. Sullivan, James Rauger, S. R. Hosmer, George James, Levi Claypool, Wm. Galigher, Daniel Brush, E. Ball, C. B. Goddard.

Licking County.—A. Sherwood, A. J. Smith.

Franklin County.—R. McCoy, W. Dennison, jr.

But one feeling actuated all who were present, and that was of determination to push forward the work. The resolution above affords gratifying proof of it. Let that determination be adhered to—and the new directors are committed to it by the unanimous voice of the stockholders—and the public will be satisfied.

A full report of the proceedings of the meeting shall appear in our next.—*Zanesville Courier.*

Little Miami Railroad.—The Morning train from Cincinnati, on this road, commenced its trips on the 29th inst.

The Suspension Bridge across the Ohio.—The foot-way of the wire suspension bridge, extending one thousand and ten feet from Wheeling, Va., to the Ohio side has been completed, and was successfully crossed on the 12th inst., by a large number of persons.

Illinois.

One week before the railroad to this place was finished, says the Springfield (Ill.) Journal, corn could be had here in any quantity at 15 cents a bushel. Not a bushel can now be had for less than 25 cents. This is the effect of the completion of the railroad on the price of one item of the products of our farmers.

In this fertile and happy region money can be made in raising corn at 25 cents per bushel. And here is another fact connected with this matter of great importance to our farmers of moderate means. There are many who have not means to purchase stock to eat up their corn, and thus dispose of their grain. These farmers can at once turn their corn into money at good prices. We venture to say that railroads will double, yea treble the value of farms in portions of our State. Indeed, farmers would make money in giving away half their landed property to secure their construction.

Russia.

The Great Russian Railroad.—Maj. T. S. Brown, the able efficient Engineer of the N. York and Erie Railroad, has been tendered, by the Emperor of Russia, through his Minister, M. Bodisco, the office of Superintendent of the great Railroad between Petersburg and Moscow, 400 miles long, and now nearly completed, in place of Col. Whistler, deceased. Maj. B. has conditionally accepted. This greatest work of the kind in the world has been carried on to completion by Americans. The country is very level, the grade not exceeding 20 feet to the mile. Americans have also the contract for the equipment of the road. Already have they manufactured in Russia 162 locomotives, averaging 25 tons each; 72 elegant passenger cars, and 2509 freight cars, and 2 "imperial saloon carriages," sufficiently capacious to carry the whole Imperial Court. Forty millions was the estimated expense of the work. The Imperial saloon carriages are 80 feet long, 9 broad, costing \$15,000 each. Russian mechanics are to be instructed as Engineers, carriage builders, machinists, etc.

New Locomotive for Common Roads.

Anxious to advance, to the utmost of our ability, the successful application of steam locomotive on our turnpike roads, we readily give insertion to the substance of a communication from a correspondent at Tavistock, partially describing a common road locomotive on the high pressure condensing principle, from which, if there is no error or miscalculation in the results, we must almost believe the system successfully matured. This engine, we are informed, is of nine-horse power; while in proportion it is the lightest ever made, weighing altogether about 30 cwt. The boiler is on an entirely new construction, weighing only 8-cwt. There are two cylinders 4½ inches diameter, and the great advantage in its light weight is obtained by the use of an entirely new condensing apparatus, without which our informant believes no locomotive can succeed on common roads, in consequence of its own weight. By this apparatus, which consists of a great number of small tubes, arranged in various directions, the steam will be completely condensed to a vacuum, by which, it is calculated that there is a gain of twenty-eight lbs on an inch, at a speed of only fifteen miles per hour, above the power of the locomotive now in use, and the principle can be applied to every description of engine. The advantages claimed by the inventor, who is about securing a patent, are—a saving of fifty per cent in the fuel of railway locomotives; no tender required, and, consequently, the propelling its weight and fifty tons of water avoided; returning the condensed steam to the boiler without taking power from the engine; the enormous resistance of the atmosphere acting on the steam passing off from the funnel when at high velocities avoided; expense of water stations saved, the boiler once filled lasting some hundreds of miles; greater safety; the disagreeable puffing noise done away with; boilers will not corrode so soon, and, consequently, not required so often cleansing. For marine purposes the advantages are great.

With three hogsheds of pure water a steamer could cross the Atlantic, avoiding the use of salt water, so injurious to the boilers; all the stowage for fuel saved for more passengers or freight; smaller engines, in all cases will do the same work. In stationary engines for mines, &c. 29 per cent will be saved in fuel, and more work accomplished—the expense of pumps for raising condensed water saved. In mines the same size engine will admit of the shaft being sunk deeper under the adit, in consequences of so much condensing water being required to be lifted from the adit with the present engines. Mines where engines are required can be worked at much less cost. We are informed the inventor is a poor man, and has been under great difficulties in the construction of his present carriage, which is stated to perform exceedingly well. If he has succeeded to the extent described, we have no doubt he will find friends to back him, and public interest and patronage will eventually reward his labors.—*Mining Journal.*

Railway Law.

On the Law relating to the Interests of Directors in Contracts with the Company.

Most railway acts provide that no Director shall have any direct or indirect interest in the contracts with the company, and that if any of the Directors at any time subsequently to his election shall be so interested the office shall become vacant, and that thenceforth he shall cease from voting or acting as a Director. The expediency of such a precaution is manifest. It is contrary to all the rules of prudence to place a man in a position in which his duty and interest so far conflict as to induce him to sacrifice the former to the latter. But those who are practically acquainted with the management of railways know how often the provisions of Acts of Parliament in this respect are evaded, and when they are openly violated, how futile the provisions of such Acts are to punish or prevent those who infringe them. Considering how important it is that the purity of the Directors of a company should be preserved, the law requires to be much more stringent than it is in this respect. There ought to be some further consequence than of forfeiting the seat at the Direction, and the infringement of such a wholesome regulation should be punished by penalties, by criminal proceedings when the party acts from corrupt or dishonest principles. A few cases have been before the courts, which establish to what kind of contracts the disqualification applies. Thus—

Some of the Directors of the Sheffield and Manchester railroad (Act 7, William 5, c. 21), by whom the resolutions for the calls were made, were members of a Banking Company who were the bankers and treasurers of the railroad company, and as such received and gave receipts for calls and paid cheques drawn by the Directors, &c. A clause of the Act of Parliament (sect. 150) enacted that no person concerned or interested in any contract with the company, should be capable of being chosen a

Director, and that if any Director should, directly or indirectly, be concerned in any contract with the company, he should thereupon be immediately, and was thereby discharged from the Direction. It was held that this clause applied only to contracts made with the company in prosecution of its enterprise, and did not disqualify the Directors above-mentioned. (Sheffield, Ashton-under-Line, and Manchester railway company v. Woodcock, 7 Meeson and Welsby, 574, 2 railway cases 522.)

But in the following case it was held that Directors who had lent money to a company, could not recover it without going through the formalities required where a contract is made by them with the company. Messrs. Teversham, Lund and Hart were three of the Directors of a company called "Cameron's Coalbrook Steam Coal and Swansea and Loughor railway company," which was formed and registered in pursuance of the 7 and 8 Vict, c. 110. By a general resolution of the company, passed in July, 1847, the Directors were authorised to borrow on mortgage, bond or other assurance, such sums, at such periods and rates, as they should deem expedient. After this resolution was passed Messrs. Teversham, Lund, and Hart lent the company certain sums on the security of a promissory note, and a lien on certain calls which were to be made. The bill which was filed by Messrs. Teversham, Lund and Hart against the company, stated the above circumstances, and prayed for an account of the sums due to the plaintiffs, and of the moneys received in respect of the calls, and for payment to the plaintiffs of the sums due to them, and for an injunction to restrain the company from receiving the moneys payable in respect to the calls.

By the 7 and 8 Vict, c. 110, s. 29, it is enacted, that if any Director be, either directly or indirectly, concerned or interested in any contract proposed to be made by or on behalf of the company, whether for land, material, work to be done, or for any purpose whatsoever, during the time he shall be a Director, he shall, on the subject of any such contract, be precluded from acting as a Director; and that if any contract or dealing shall be entered into in which any Director shall be interested, then the terms of such contract or dealing shall be submitted to the next general or special meeting of the shareholders to be summoned for that purpose: and that no such contract shall have force until approved and confirmed by the majority of votes of the shareholders present at such meeting.

The bill did not allege that the contract as to the loan had been submitted to any general or special meeting of the stockholders, as required by the 29th section.

To this bill the company put in a general demurrer.

Mr. Russe! and Mr. W. W. Cooper, for the demurrer, contended that, under the 29th section of the Act, the contract mentioned in the bill was invalid.

Mr. Swanson and Mr. Prendergast, for the bill contended that the words of the Act, "or any purpose whatsoever," had reference to matters *ejusdem generis* with the matters particularly mentioned—as land, materials and work to be done; and that the contract as the loan did not come within the 29th section.

Knight Bruce, V C., said he thought that the contract mentioned in the bill came within the 29th section, and allowed the demurrer.—*Teversham v. Cameron's railway company*, 11 *Law J.*, Ch. 177.—*Record.*

Value of Property as Affected by Railways.

The following facts, as they appeared in evidence in, or arose out of a recent inquiry before Wm. Adam Hulton, Esq., as umpire in an arbitration to determine the value of 7,381 yards of land, required for the purposes of the Bolton, Blackburn, Clitheroe and West Yorkshire Railway, would, notwithstanding the present great number of unoccupied houses in the immediate vicinity, support an inference that so far at least as railway companies are concerned, there is no depreciation in the value of land. For a distance of about nineteen chains within the township, and a little north of Clitheroe, the line of the above rapidly progressing railway intersects a small farm of 13 statute acres, the property of the Misses Oddie, by whom the farm was purchased in 1840, by public auction, for £1,610. It was in evidence that the property was mere farming land, unavaila-

ble for building and manufacturing purposes, that the Misses Oddie claimed for the 7,381 yards of land required by the railway company the sum of £2,675 5s. 3d., but which sum they ultimately reduced to £1,700—that is, £90 more than the whole estate originally cost. It did not appear that any capital had been expended in improving the property. Though the award of the learned umpire falls far short of the reduced claim, (in fact nearly approximate to the sum offered by the company), yet, when the price of the whole 13 acres is considered, the claimants seem to have reason to be satisfied with the award, of which the following are the details:—£480 as the value of the 7,381 yards of land, and £463 5s. as compensation for damage and injury done, or contemplated to the remaining property of the claimants.—*Record*.

Railway Travellers' Assurance.

The new system of life assurance, in the event of railway accident, is now in operation on the London and North-Western and Lancashire and Yorkshire railways. It commenced with the present month. The assurance tickets for the single journey, irrespective of distance, are obtained at the same time that the passenger pays his fare and takes his ticket. The first-class passenger, paying 3d., insures £1,000; the 2d, £500; and the third-class passengers one penny, £200; the amount in the event of loss of life to be paid to their representatives. We quote the preceding from the *Times*, to which we have to add, that the assured are entitled to compensation in cases of personal injury. We also understand that the single journey tickets will be procurable in the course of next week, on the Lancaster and Carlisle, the Caledonia, North British, Edinburgh and Glasgow, Chester and Holyhead, Eastern Counties, Cocker mouth and Workington, and the Stockton and Hartlepool railways, and that arrangements are in progress to afford the same accommodation to the travelling public on other lines, as speedily as possible. This is as it should be, and evinces a vigorous determination on the part of the Railway Passenger's Assurance Association, to carry out the system so advantageously adopted, that will, no doubt, obtain universal patronage.—*Record*.

Institution of Mechanical Engineers.

July 25.—Mr. C. Beyer, one of the vice presidents, in the chair.—Amongst the papers read were the following:—'On an Improved Locomotive Boiler,' by Mr. Ramsbottom, of Manchester. It commenced with some introductory observations on the fact that the absolute power of the locomotive, or any other description of steam engine, is directly proportioned to the quantity of steam which the boiler can produce in a given time. The writer then pointed out the direction in which improvements in the construction of boilers had recently been tending, viz: to obtain a greater amount of heating surface, which in some instances had been increased threefold relatively to the size of the blast pipe.—The desideratum therefore was to get a large amount of heating surface without increasing the diameter or length of the boiler, or making it oval. To obviate these difficulties and obtain the required heating surface, Mr. Ramsbottom proposes to construct a copper fire box with an arched roof, the top of which would be nearly as high as the cylindrical part of the boiler. With such a box the whole of the cylindrical part of the boiler could be filled with tubes, as the longitudinal stays could be removed. By such an arrangement 225 tubes, of 2 in. external diameter could be used, the shell being 3 ft. 8 inches in diameter, and 10 ft. long. The total heating surface of the fire box is 80 ft. and of the tubes 1,177 ft. This arrangement involves the necessity of keeping the boiler full of water, and it therefore became necessary to provide a separate steam chamber. This consists of a cylinder 18 ft. long and 20 in. diameter, fixed over and parallel to the cylindrical part of the boiler. This tube has a cubic capacity of 28½ feet, and has two communications with the boiler. It is proposed that the water shall occupy about one-fourth of the tube, leaving a clear space of 21 cubic feet for steam.—A brief discussion followed.—Messrs. Slater and Cowper considered that there would be a tendency to prime in such a boiler. Mr. McConnel agreed in that opinion; but he also thought that it might be obviated by having a more continuous communication between the

generator and the cylinder. He remarked that the question whether long or short tubes were most economical had not yet been settled, and the subject was of great importance. He used small tubes, and many of them, from an impression that they were most economical.

'On the Economy & Expansive Action of Steam, and a New Valve for Steam Engines,' by Mr. W. Fairbairn.—The principal part of this paper is devoted to a consideration of the expansive action of steam, especially with reference to the economy which this system has introduced. As an illustration of this economy, it was stated that ten years ago the average or mean expenditure of coal per indicated horse power was computed at from 8 to 10 lb. per hour, but now it is under 6 lb. The paper was a well reasoned exposition of the principle of the expansive action of steam, a history of its progress, and an examination of the various methods of working expansively. The principle of the apparatus described by Mr. Fairbairn is that of the cam, which, by a peculiar arrangement, cuts off the steam at any required part of the stroke. The workings of the valves is said to be effected with certainty and simplicity. Very little discussion ensued. Mr. N. Smith, of Dudley, however, remarked that he had never seen a better system. Its simplicity was remarkable; but he had some doubts as to the durability of the apparatus. In the absence of any evidence as to the economy of the invention, the principle was not touched upon. It was suggested that Mr. F. should be invited to give the Institution the practical results of his observations, and that diagrams of the workings of various descriptions of steam engines in Staffordshire and elsewhere should be collected, and Mr. Smith, of Dudley promised to present to the Institution a considerable number.—*Railway Chronicle*.

The Copying Electric Telegraph.

The specification of the invention by means of which a letter written in London may be copied *verbatim et literatim* in Liverpool, has been deposited in the Enrolment office, and discloses the means by which this electric correspondence is to be accomplished. Wonderful as it seems to have the power to produce a fac-simile of writing instantaneously at any distance, the mode of operation is extremely simple, and its principle may be easily explained. The writing materials consist of tin foil, varnish, and a quill pen. The letter thus written is applied to a cylinder; a metal style or point presses on the writing as the cylinder revolves; and the point being attached to a screw, it moves gradually along from one end of the cylinder to another. The thread of the screw is sufficiently fine for the point to traverse, six or seven times over, each line of writing before it passes by the revolution of the cylinder to the next. The point is connected with one pole of a voltaic battery and the cylinder is connected with the other pole, so that the electric current may pass from the former to the latter; but as varnish is a non-conductor of the electricity, the circuit is interrupted whenever the point presses on the varnish writing. The distant telegraph instrument is an exact counterpart of the one that transmits;—but, in place of the tin foil, paper moistened with a solution readily decomposed by electricity is applied to the cylinder. Thus the electric current transmitted through the ordinary telegraphic wires is made to pass from the metal points to the cylinders of the two instruments, through the interposed moistened paper on one, and through the tin foil on the other. When the metal point of the transmitting instrument is pressing on the bare tin foil, the electric circuit is completed through the paper on the distant cylinder, and by the decomposition of the solution a mark is made; when the point is pressing on the varnish, the circuit is interrupted and the marking ceases. In this manner, the point of the transmitting instrument, by passing several times over each line in different parts, from the top to the bottom, produces an exact copy of the forms of letters; the writing appearing pale-colored on a dark blue ground consisting of numerous lines made spirally round the cylinder.

It is essential to the correct working of the instruments that they should rotate exactly together; and this the inventor, Mr. Bakewell, has accomplished by the regulating power of electro magnets brought into action at regular intervals by means of

pendulums. It would be foreign to our purpose to enter into the details of this regulating argument than to state, that by means of what is called a guide line, the operator at the copying-station can tell with accuracy whether his instrument is moving faster or slower than the other; and he can thus regulate the pendulum accordingly. This guide line, we are informed, is so delicate an indication of the reciprocal movements, that a variation in the beat of the pendulum of less than the one thousandth part of a second may be detected.

The rapidity with which communications may be transmitted by the copying telegraph is one of its peculiar features. Cylinders six inches diameter may, it is stated, be regulated to revolve thirty times in a minute and produce distinct copies of writing. The length of a line round such a cylinder would be about eighteen inches, within which space one hundred letters of the alphabet may be written in round hand. Assuming, therefore, that thirty revolutions would be sufficient to copy four lines, the rate of copying would be four hundred letters per minute with a single wire; and with two points that number would be doubled.

The inventor states in his specification, that the copying telegraph affords peculiar facilities for establishing a system of telegraphic transmission and deliveries in all towns every half hour throughout the day. If this plan could be arranged at a moderate cost, the tin foil and varnish would have their compartments in all writing desks; and we should become so habituated to rapid communications, that a letter by post would appear as tardy as we now consider a parcel sent by stage waggon.—*London Spectator*.

American Trade with the Spanish Colonies.

A writer in the Portland Advertiser urges upon the attention of our government the importance of the American trade with the Spanish West Indies, and the necessity of some more advantageous arrangement than that under which our trade is now carried on with these colonies. Our trade with Porto Rico and Cuba at this time exceeds in value that with the possessions of any and all other in the West Indies, and we doubt not that if some of the very onerous burthens and restrictions with which it is hampered could be removed, it would be greatly increased. The last treaty with Spain was negotiated something more than a quarter of a century ago, since which time many changes have taken place in the course of trade as well as in the products exchanged, which changes, in the opinion of the writer, calls for new regulations and stipulations adapted to the present state of trade. He says—

"The duties imposed by the Spanish Government upon nearly all the articles with which these islands are supplied from the United States are very heavy, and in some cases almost amounting to a prohibition; for example, flour under a Spanish flag pays \$2 50 per barrel, under the American \$10. The articles which England supplies pay a much less rate of duty than those from America.

The tonnage duties in Cuba and Porto Rico are very heavy burdens in commerce. In Cuba they are \$1 50 per ton, excepting vessels loading entirely with molasses. In Porto Rico they are \$1 00 per ton on American vessels and but 68½ cents on all other nations.

We are surprised that the American government has so long quietly submitted to the unjust discrimination against them in Porto Rico. The English and French governments have both shown a greater interest in their commercial treaties with the Spanish government than the United States, and every American who has visited the Spanish Islands will bear witness to the greater respect and attention paid to the citizens of either of the above named governments than to America.

In addition to the heavy tonnage dues required in these islands, there are petty charges and expenses upon our vessels which in the aggregate amount to a large sum, when we consider that between 1500 and 2000 arrivals take place in the island of Cuba yearly.

Some of these charges are particularly obnoxious such as that of requiring vessels to pay for the services of the Custom House Officer or Inspector as we term them, while on board the vessel. In the case of shipwrecked vessels, the local regulations of

these islands prohibit the master from selling the savings of vessel or cargo, even though they be of a perishable nature, although the maritime laws of most nations, we believe, makes the master the agent for whom it may concern in such cases."

The subject is one of the highest importance to our commercial men, and we doubt not that the Administration, which has already shown its desire to foster and promote all the great interests of the country, will take the matter into consideration, and promptly do whatever may be consistently and properly done to place this important trade in a reasonably advantageous position. With our geographical advantages, so greatly in our favor, and producing as we do the breadstuffs and other supplies required by the people of the islands of the tropical Archipelago, there is nothing wanted but a fair and equitable commercial arrangement to enable us to secure a large part of their profitable trade. —*Baltimore American.*

AMERICAN RAILROAD JOURNAL.

Saturday, September 8, 1849.

The Editor of this paper has been detained from his post for the past two weeks, in consequence of a domestic affliction. Our friends and correspondents will please accept this as an apology for any want of attention to their favors, and for the lack of editorial matter in our present issue.

Old Colony Railroad.

By a glance at the map of the railroads in the southern part of Massachusetts, it would seem that there was a great waste of expenditure resulting from the want of a proper system in the beginning; and that if the work were now to be laid out again, a great saving might be effected in a proper plan. Such, for instance, as that suggested by Cyrus Alger, Esq., of Boston, viz: to make one main track from Boston to Taunton, with diverging branches thence to Fall river, New Bedford, the Cape, and Plymouth, instead of its now having almost as many separate roads, two of which cross each other after a wide divergence, and one of which goes far round another. As they are now laid out, they accommodate a large area, but certainly not in the most economical mode.

The Old Colony road was built before the projection of the Fall River road, through a section of country from Boston to Cape Cod, which was regarded by many as not very likely to give a liberal support to a railroad. The towns it passed through were small, and a considerable proportion of the freight they supplied found its way in coasters to and from the metropolis. The inland towns had few manufacturing establishments, and these were generally not of a class to add largely to the transportation business of the road. Its support seemed to be in great part dependant upon the Cape travel to and from Boston, which had mostly passed through Plymouth in stage coaches or across the bay in sailing packets.

The road had hardly been built and gone into operation, before the Fall River road was connected with it as a branch, striking off from it at South Braintree, 13 miles from Boston. From this a branch was laid out at Wareham, thus reaching farther down towards the Cape than Plymouth, and consequently taking all the Cape travel from the principal portion of the Old Colony road. This was a serious blow to its prosperity, which should have been anticipated by continuing the original road from Plymouth to Sandwich or farther, an enterprise which is now, we see, recommended, and for which a charter is about to be applied for at the coming session of the Massachusetts Legislature. Soon after this check followed the commercial em-

barrassment of the last two years, which so seriously affected the value of all railroads imposing upon them the security of paying the highest rates of interest for the money required for their heavy expenses to which all roads are subjected until they are completed and equipped. This road, like most of the others, was in the market as a borrower; and some inferences not perhaps wholly warranted, have been drawn as to the large amounts, for which it became responsible at the highest rates of interest, from the fact of the President not volunteering a full *expose* of the financial affairs of the company in reply to certain definite questions propounded by the committee appointed by the Legislature, which questions he fully and finally answered. But however this may be, we have been much gratified in passing over the road several times this summer to learn its increasing prosperity and the certainty of its having established itself upon a firm footing under the efficient management of its present President, E. H. Derby, Esq., of Boston. One of the first measures of this gentleman was to liquidate the debt by the issue of new stock, which even in the hard times of 1848 was mostly taken up by the old shareholders. Every unnecessary source of expense was then checked, while at the same time the road was greatly improved by laying of new rails where they were required, and of a double track from South Braintree to Boston for the accommodation of the increased travel brought in by the Fall River road. New contracts were also made of the greatest consequence to the road, some of which, as the transportation of gravel from Quincy to Boston, and of ice from Plympton, were entirely new sources of revenue. Both of these are remarkable instances of the resources of the people of this section of the country, who, if their soil be too barren, and their climate too inclement for the profitable production of the fruits of regions called more favored, and nature has denied them rich mines, can still drive a prosperous business in the removal of their barren soil and rough rocks and of the covering which their cold climate lays upon their numerous ponds. The receipts for the transportation of gravel alone now amounts to about eight hundred dollars per week under one contract, and is on the opening of a new point of supply soon likely to be one thousand dollars per week. It is carried to the South Cove to make more land on this side of Boston; and the extent of the contract is such, that it must last some six years, by which time it is reasonable to suppose other contracts of the same nature will have been entered upon. In this the railroad company finds the motive power and the track to the source of supply, the contractor furnishing his own cars and paying 13 cts. per cubic yard for the transportation. He receives from the corporation of the city 28 cents for every cubic yard deposited on the cove. The work of digging and loading is effected by a steam excavator, and is accomplished with great success, except strata of a very solid kind of hard pan are encountered as is sometimes the case.

The transportation of ice is carried on from a pond very near the road in Plympton, called Silver Lake, the water of which is very pure, and furnishes ice of great clearness. This business, though almost new, adds considerable revenue to that furnished by the various iron works, cotton and cordage mills, and other manufacturing establishments along the line of the road.

But it is in the transportation of passengers that the principal income is derived; and in the numbers of these the road compares favorably with some others

whose business one would suppose would far exceed it. We regret that we have not full data to give the statistics of this department, which is rapidly increasing in importance every year, as facilities are increased for the permanent support and transient entertainment of a larger population in the country towns. The number of season tickets sold, we are authorized to say, however, is about 300; and that the revenue of the road this summer is full \$2,000 per week more than during the same months of the last year. The change seems to be of a nature that may be depended upon as permanent; this expectation being well warranted by the great improvement witnessed in the villages along the line of the road. So that, though in consequence of the checks above referred to, the stock of the road has depreciated 25 per cent., there is good reason to expect that the road will this year be able to pay from its earnings six per cent. on the par value of its stock, besides having acquired an increased permanent value.

In this connection we give below an extract from the Old Colony Memorial, of August 25th, published in Plymouth, relative to the new evidences of prosperity it is indicating, consequent, no doubt, upon the business facilities afforded it by the railroad.

GROWTH OF PLYMOUTH.

An impression has generally prevailed that Plymouth the venerable mother of New England, was in her dotage—that she was not stationary but receding, and must rest her claims for distinction upon her early fame and ancient traditions. Many have supposed that even the railway system which has carried improvement everywhere else could do nothing for Plymouth; and some have even imagined that it had accelerated her decline. It is true that for many years her sons have annually migrated to other cities and her fair daughters have found partners and homes in distant regions, but the mother is still prolific even in her old age, and there is reason to hope that she may yet see her younger offspring spring up around her.

At the present moment there are no less than seventeen new houses building in Plymouth, and a demand for more.

For some time past the Samoset House and other places of entertainment have been full to overflowing, and several families have been prevented from visiting the place by lack of room. The boarders at the Samoset have for some weeks varied from eighty to ninety.

The cordage establishments under the charge of Messrs. Robbins and Spooner have lately enlarged their works and extended their business so that they can now manufacture 2200 tons of cordage yearly in place of 1000 four years since. A new establishment for cordage has been set up by Capt. Cowan, and an iron foundry by Messrs. Drew and Cobb.

But in addition to this the shoe business which has done so much for Abington and the Bridgewater, has been extensively introduced, not less than 100,000 pairs of shoes having been made here during the last year.

It is true the fishing business has declined, but that has rarely built up any town, and is now giving place to trade and manufacture which promise to be remunerative. The railroad has undoubtedly given a great stimulus to manufacturers by the facilities it affords; for the ropewalks of Plymouth are now within two hours of Boston and orders can be given and a gang of rigging delivered in Boston within a few hours, and the business has grown in consequence. But a new trade is springing up which is entirely new to Plymouth. It has become a seaport for many towns on the line of the railroad. Corn and flour are now imported into Plymouth for Hanson, Halitax, Abington and the Bridgewater, and they have even been sent as far as South Weymouth. In May and June past not less than 10,000 bushels of corn were sent out of Plymouth by railroad, and this trade must grow with the rapid increase of these inland populous villages. The freight by railroad is said to be increasing 25 per cent a year.

There still remains a large water power in Plymouth close to the sea and capable of great improve-

ment. No town in the State is better adapted to the iron business, for here coal and pig iron may be landed within a few rods of the waterfall and the manufacture conveyed by railroad and vessel to a ready market.

With what is now achieved and with the advantages that still remain it is safe to predict a brighter future for Plymouth, and it would not be surprising if a few remittances from the expeditions she has sent to California should further enliven the old lady.

D.

Railroad to the Pacific.

The subject of the construction of a railroad from the Mississippi to the Pacific, always interesting, is now attracting more than usual attention from the near approach of the time for holding the great conventions at St. Louis and Memphis, by the respective advocates of the middle and southern route. As the time for commencing this great work cannot be far distant, and as the route, and the mode by which the means to build the road shall be provided, are yet to be determined, it becomes a matter of interest to ascertain the views of particular sections of the country in relation to this subject, as so much evidence towards settling the preliminary questions of route, etc. before commencing the work. We are happy to lay before our readers a communication upon this subject from one of the most influential men in Indiana, which we look upon as indicating the views likely to prevail in this State in relation to this great work:

ATLANTIC AND PACIFIC RAILROAD.

The public mind seems to have settled upon the great importance of one or more leading railways from the Atlantic to the Pacific, and several routes have been proposed. Mr. Whitney has been zealously advocating the northern route, commencing at the northwest end of the great chain of lakes, and striking the Pacific at the mouth of the Columbia. Another route commencing on the Atlantic at a southern point and running through Alabama, Tennessee and Arkansas has been presented, and a convention is proposed to be held next October at Memphis, to take measures to secure Congressional aid in its construction. There is still another route that has been more recently brought before the public mind. This route lies between the other two, and may be properly designated the *central route*. It is not my object to speak disparagingly of the northern or southern routes. A single glance at the map of the United States, must satisfy all that the construction of all these works will yet be demanded, by the rapidly increasing commercial importance of the central and extreme west, and it is manifest that there can never arise any cause of jealousy or rivalry between them, as each will be tasked to its utmost capacity.

The central route would naturally have four principal points of termination on the Atlantic—Boston, New York, Philadelphia and Baltimore. Lines would be constructed from each of these points to a common line, running west through the States of Ohio, Indiana and Illinois, to St. Louis, and from thence to the Pacific Ocean. This central line seems likely to enlist much public favor. The character of the country, its peculiar adaptation to a contiguous line of railway, the great productiveness of the country over which it traverses, its numerous and valuable branches and connections, and especially the *shortness* of the route, and *cheapness* of construction, as compared with all other practicable routes, has already secured to it the co-operation of energetic companies upon the whole line as far west as the State of Illinois; and so soon as the right of way through Illinois shall be had, the line will be extended to St. Louis. It may be proper for the

benefit of your numerous readers that I should be more specific, though my limits will not let me go as much into particulars as I would like. It is known that the Baltimore and Ohio railroad is pushing that work on to Wheeling. This line can ultimately intersect the main line at the Indiana State Line, passing through Zanesville, Columbus, Urbana, Pequa, and Greenville. The Philadelphia and Pittsburgh line will intersect the Indiana line at the same point, passing through Beaver, Canton, Wooster, Mansfield, Marion, Bellefontaine and Sidney. The New York and Boston lines passing through Cleveland, will intersect the main line about 15 miles west of Mansfield and the line from Sandusky City will connect with the main line at Bellefontaine. The four lines may unite at the Indiana State Line upon the direct line through Indianapolis and Terre Haute to St. Louis. All these lines, with some excepting links, are in an active and rapid state of construction, leaving no reasonable doubt of their ultimate completion, and that at no remote day; so that I deem it to be settled that the central route from the Atlantic to St. Louis will be constructed, whether either the northern or southern road shall ever be made or not; and the friends of the central route east of St. Louis, should press their work to completion, and should give to Mr. Benton their co-operation and support in his great enterprise of continuing the road from St. Louis to the Pacific.

Portland and Montreal Railroad.

We learn that contracts have been made by the Directors of this great line of railway, both in Canada and the United States, with Messrs. Black and Wood, to construct the unfinished part of this road a distance of about 200 miles, for \$27,000 per mile, or for \$5,400,000, in case the companies elect to pay the Engineering and build the Station and Engine houses. The whole line is to be completed within three years. The contractors Messrs. Black and Wood, are well known throughout the whole country as men of large property, and as most energetic and successful contractors. These gentlemen have built the portion of the road already finished, making about 80 miles, to the entire satisfaction of both the American and Canadian companies; and as each company has abundant means provided for the whole work, we may set down the completion of the road within the time agreed upon as a fixed fact. We learn verbally, that on the Canadian end of the line, the contractors take in payment, one quarter of the amount in stock of the company, and the balance in the city of Montreal bonds, and the guarantee of the Colonial Government. On the American side they take one quarter in stock, one quarter in the bonds of the company, and the balance in cash, as the work progresses. To provide the cash payment, this company has the bonds of the city of Portland for about \$1,000,000, which can be converted into cash at par, at will.

We take great pleasure in announcing the above result. We think that the gentlemen entrusted with the management of this work in making the above contract, have acted with that wisdom and prudence which has characterised their whole conduct since the first commencement of the undertaking. When this road was first proposed the entire community, with the exception of those immediately interested in the road, were utterly incredulous, not only as to the ability of those engaged in it to construct it, but also as to the practicability of the whole idea. Not a cent could be obtained out of Maine for this portion of it, and as no road of magnitude, in New England had been built, without the aid of Boston,

the mother of New England's railroads, this fact alone was regarded as settling the whole question, and the efforts of the people of Portland were looked upon as resulting in a loss of all their money expended upon a project which must surely fail. Yet despite of all this, the road was commenced and pushed forward with extraordinary vigor during a season of unexampled pecuniary pressure, which prostrated so many of the Massachusetts enterprises. The prompt payment of its subscription list has furnished ample means to meet all engagements as they have matured. The credit of the company is without a stain, but very few shares have been sold, and these at very nearly a remunerative price, and most of the stock still remains in the hands of the original stockholders. It has created no stock at a discount, nor has it wasted its means by hiring large sums of money at an enormous shave. And while no pains or expenses have been spared to make a first class road, and in this respect it is not inferior to any one in the country, the strictest economy has been maintained, and stockholders have the satisfaction of finding that the business of the part already constructed assures an ample return upon their money invested. By making the above contract, the price of the stock will advance as the work progresses, as both the contractors and stockholders have a mutual interest in maintaining its value. The mere fact that gentlemen of admitted pecuniary ability, and distinguished for their energy and sagacity, as are the contractors, and who are thoroughly acquainted with the value of its stocks, should be willing to take so large a proportion of it in payment, is the very best evidence of its ultimate value, and must exert a very salutary influence upon its market value. Among the many schemes to bring to the Atlantic the produce and business of the west by railway, the above road has been the last proposed, and bids fair to be one of the first to be completed. None have gone forward with such a uniform step as this, and there are none, the affairs of which have been managed with greater skill and prudence; and we deem it due to Mr. Morton, the Chief Engineer of the American, and for a time the Chief Engineer of the whole line, to say, that the success of the work thus far, is to a very considerable extent due to his skill as an engineer, to his practical good sense, his untiring industry, and more than all, to the inflexible honesty and straightforwardness of his character; which qualities, in the end, were certain to secure the ultimate adoption of his views, however much in the outset they may have been opposed to those of the Directors or the public. The success of the work under all its obstacles, is the best tribute to his qualities as an Engineer, and its completion cannot fail to give him a high rank among the leading members of his profession.

Old Colony Railroad.

The receipts of the Old Colony railroad corporation for the past five weeks, show an increase of over eleven thousand dollars, compared with the same period last year.

Liabilities of Railroad Contractors.

Edw. C. Thompson was recently tried at Dover, N. H., upon an indictment for assault and battery, in ejecting a man and his wife from the cars of Boston and Maine Railroad at Madbury, who refused to give up their tickets. The Court instructed the jury that for the purposes of this trial, the company had a right to make regulations for their own convenience; also, if they thought the conductor used more than reasonable violence in ejecting the man from the cars, they might bring in a verdict of guilty.

The jury after, a few hours consideration, returned a verdict of not guilty. It was proved that the conductor suffered a little upon the occasion from the tongue and finger-nails of the woman who was taken out.

Railroad from Macon to Augusta.

Contrary to our belief there is now every prospect that the projected railroad from Macon to the Georgia railroad will be speedily built. There seems to be no difficulty in raising the necessary means for the work. The county of Putnam has already subscribed \$100,000, which will be somewhat increased.—In relation to the subscription from other sources, the Macon Journal says—"we have before us a letter, from a wealthy and influential member of the Curtright company, suggesting that the road diverge to the East from Eatonton, that it be carried thence across the river at Long Shoals, and connect with the Georgia road, at or near Greensboro. This route he says will require the construction of only about five miles more of the road, than the route at present contemplated, and that it will shorten the distance to Augusta, fully that much. If this suggestion be adopted it will carry the road by one of the best water powers in Georgia, where a large manufacturing interest will immediately spring up. As an inducement to adopt this route, the letter states that the Curtright company will take stock to the amount of \$100,000.

There is also before the commissioners a proposition from Messrs. J. D. Gray & Co., of this city to take the contract for constructing the entire road at cash prices—to take one half the cost of grading, and one fourth the cost of superstructure and bridging in stock. This is not intended, of course, to interfere with other persons who may desire to take stock payable on work. Mr. Gray's proposition is equal to a subscription of \$125,000.

Our friends in Augusta feel confident that they will be enabled to raise at least \$100,000. The citizens of Jones county, are pledged to raise \$50,000, and we understand will redeem their promise.—These sums together with the private subscriptions in Macon, we think, will be amply sufficient to complete the work."

Western and Atlantic Railroad.

A correspondent of the Augusta Chronicle gives the following account of the progress of the Western and Atlantic railroad, Georgia.

The length of the tunnel is 1477 feet, its height 18 feet, its width in the clear, 12 feet. It is cut in a great measure through solid rock. The miners have had many difficulties to contend with, in consequence of the peculiar formation. On the western side, near the surface, they encountered thick layers of blue limestone, the edges of which projected towards the surface. It was consequently almost impossible either to blast or break them. So serious were these obstacles, that at one time it was thought almost practically impossible to construct a tunnel at all. Owing to the persevering energy of the contractors, Messrs. John D. Gray & Co., the work was persisted in. The formation soon changed into one of solid blue limestone, and the operations have been slowly, but steadily carried forward until the mountain has been penetrated to the distance of 418 feet.

On the eastern side the ground has been more favorable. The rock encountered for a time was a species of sandstone, not difficult to be worked.—This side of the mountain has consequently been penetrated to the distance of 742 feet, leaving only 317 feet to be accomplished. The average progress of the miners is now about 100 feet per hour. There is a double force employed, and the "sound of the hammer never ceases," from 12 o'clock on Monday morning, until 12 o'clock on Saturday night. Each gang of hands works 12 hours without stopping, except to eat. Into each end of the tunnel are carried four railroad tracks,—two above to carry in the

bricks and other materials for arching, and two below to carry out the earth and rock excavated.

This Tunnel was commenced on the 15th of July, 1848, and will be ready for the Cars in the month of December next. It has not only been constructed in less time than any work of similar character and extent, but we venture the prediction that it cannot be surpassed in its massive and substantial workmanship. The lateral walls are of rock, six feet thick, at the base and five feet at the top. The brick arch turned upon these walls is four feet at the base, and three feet over head. This arch is turned under one of wood of immense strength and massiveness, and the intervening space is carefully filled up with broken stone, so as to throw an equal pressure upon all parts of the work. The whole is laid in the best cement, and looks as though it would remain until the "ever lasting hills" are shaken, to their lowest foundations. The approaches to the Tunnel are carefully protected on both sides, by massive masonry, and every thing about the work is done in a style that reflects infinite honor upon the contractors. This is perhaps not the time to speak the whole truth, in regard to this enterprise; but we will venture so far as to remark, that but for Mr. Gray, it never would have been accomplished, or at least, not in years to come. It is a work which required strong practical common sense, and business capacity,—qualities not often to be met with.

The road is now ready for the cars, to the very mouth of the Tunnel. The Culverts and Bridges are nearly all finished, the superstructure is down to within two or three miles of the Chattanooga, and the iron has been laid some four or five miles beyond the Tunnel. An engine and cars will be taken over the Mountain in a few days, and the entire road, with the exception of the Tunnel, will be completed by the 1st of November.

Grand National Railroad Convention.

It has been proposed to hold a national convention in St. Louis, on the third Monday of October, of those friendly to an extension of a railway and telegraph from the Mississippi to the Pacific. An address has been published by "the people of St. Louis to the people of the United States," from which we make the following extract:

"Let us (says the committee) contrast briefly the consequences of erecting this road, with those which would follow a failure to make it. Were it completed, the first car that should rumble over the Stony Mountains in its fiery course across the Continent, from the Atlantic to the Pacific, would send a new sensation through the world. "Britannia, Empress of the Sea," losing much of her pretension upon her great marine employed in the India trade, would feel that the foundations of that supremacy were about to crumble, while from the Ley Cape, to the fair islands of the South Pacific, and along the eastern shores and islands of Asia and Australasia, and throughout all the terra firma of the Pacific Seas, would be awakened a new spirit, ideas of a new destiny, and feelings of a new attraction. The eyes of those nations would be drawn to the new lights, which will illuminate the peaks of the Sierra Nevada, nor would their gaze be turned until their regenerated merchant vessels, moored in American harbors, should have exchanged their costly burdens for the substantial products of the United States.

Attracted to the great eastern station of the Continental Road, as steel to the magnet, a freight would roll down upon the States of the Union, such as the India Companies never saw, embracing the furs of the north, the drugs and spices of the south, the teas, silks and crapes of China, the Cashmeres of Thibet, the diamonds of India and Borneo, the various products of the Japan Islands, Manchooria, Australasia, and Polynesia, the results of the whale fishery, the gold, silver, quicksilver, jewels and precious stones of California, and the innumerable and unimaginable elements of commerce which would be brought into life from the depths of the sea, and from new and unexplored regions by the enterprise and ingenuity of our countrymen.—These elements would be distributed throughout the Union, giving a new impulse to population, to trade, to industry, to art, and to all the employments of our people. Our surplus meat and bread, cotton goods, hemp and cordage, lard, leather and hardware, and other products, would find a new, a large and increasing market in return; while the Bible, the Printing Press, the Bailot Box, and the Steam Engine, would receive a welcome passage into vast and unregenerated fields, where their magic powers and blessed influences are greatly needed.

But on the other hand, if we fail to make this road, and California and Oregon remain without any practicable or convenient connection with the old States of

the Union, who can doubt that a new Republic will grow up on the shores of the Pacific, which would perhaps become independent of the Union, and obtain a supremacy of their own upon an Ocean favorable to Steam Navigation, and the very home of the trade with Asia. The whale fishery, the present American trade with China, the Pacific Islands and the North-west Coast, would be shared, if not monopolized by the new republic. The central authority would find their power over a people so remote to be feeble and insufficient. With great mineral wealth in their possession, with a trade before them which has been the Cynosure of Commercial Nations during the whole Christian Era, and the experience and energy of the race whence they derive their origin, who can doubt their future power and progress in complete independence of all other nations.

The true policy of our government and country, therefore, in reference to this subject, is apparent.—The great importance and absolute necessity of this communication across the Continent, by Railway and Telegraph, must be appreciated. We confidently trust that it will be carried out, by national means and authority, as one of the most powerful auxiliaries to the integrity and perpetuity of the Union, and to the mission of our country in promoting and extending the influence of the noble cause of civil and religious liberty, civilization and humanity."

The address concludes with a cordial invitation to the people of all sections to send delegates. The committee desire "to have them from the mountains and from the plains, from the cities and from the country, from the hills of New England, and from the savannahs of Georgia; that they will come to us from the north and the south, from the east, and even from the west: pouring in upon us by all the numerous avenues of conveyance which converge at this point, so that the hospitality of St. Louis shall rejoice in the fullest exercise and enjoyment of its means; and that a quickening voice may go forth from the assembled mass that shall give to the great measure of American Progress assurance of its triumph."—*Baltimore American.*

Zinc Mine.

We have before alluded to the discovery of a mine of zinc at Mine Hill, N. J. A Company called the Sussex Zinc Company has been organized for working the mine, and specimens of the ore have been offered for inspection at the office of the association in New York. The Journal of Commerce says—

The ore is uncommonly rich, containing about 80 per cent. of red oxide of zinc and franklinite, in nearly equal proportions. The zinc is very pure, and strikingly superior to the imported article, being free from sulphur, arsenic, and other impurities. Reduced to an oxide—it is a fine white paint. The iron remarkable for its fineness and tenacity. The ore is supposed to be inexhaustible, and as men of wealth are subscribing to the stock, the operations of the company appear likely to be carried on with great efficiency and success.

Manufactories in Summit County.

The thriving villages of Summit county owe much of their prosperity to the various manufactories in profitable operation, and the editor of the Beacon is adding much interest to his valuable paper by noticing the principal ones. We take pleasure in transferring accounts of Reserve industrial pursuits and improvements to our columns. From the last Beacon we copy:

The Manufacture of Stone Ware.—The manufacture of Stone Ware was commenced in Springfield, Summit county, about twenty-five years since, by Daniel Fisk. About four years afterwards, Solomon Purdy built the second factory. The experiment was considered a doubtful one at the time, on account of the limited character of the market furnished in the vicinity. Akron had not then an existence, and the surrounding population was small.—The experiment was successful, and soon afterwards the Messrs. Mead built a third factory, in the same vicinity. This was in 1831, or '32. Since that time the business has been steadily progressing; until, at the present time, between twenty and thirty factories are in successful operation. Six of these are in Magadore; producing, probably, twenty thousand gallons of ware per week; worth about 5 cents per gallon. Within the limits of the township of Springfield, most of the ware factories are located. A few are just across the line in Portage county. The clay from which the ware is made is found in great abundance in that township, and a good article has been found in some of the neighboring townships.

The glazing clay is procured, we believe, in the

interior of New York. An article, however, has recently been found in a neighboring county that is thought to be equal to that procured in New York.

The process of manufacturing ware by hand is comparatively a simple one: yet we will not attempt to describe it for fear of inaccuracy. This is, however, the process by which all the ware in this country and in Europe is manufactured, save at two establishments in Middlebury, and one in New York City. The clay is ground before being used and wet. By the pressure of the hand alone, without a mould, it is turned into shape. The glazing liquid, (clay dissolves into water,) is forced over the surface of the ware. It is then seasoned or dried in the air first, and then on a sort of oven, through which the fire passes, from end to end, several times before reaching the chimney. After this process the ware is ready for the kiln. The burning requires intense heat, and yet demands much care, in order to make a good and durable article.

The establishment we first visited, in Middlebury, is owned by Messrs. E. H. & C. J. Merrill. It is on the bank of the canal. It is used solely as a bottle factory. Dimensions 30 by 50 feet; 3 stories high. They have a water power, equal to that of six horses as commonly computed. They manufactured all kinds of ware several years in Springfield, by hand. While thus carrying on the business, they conceived the project of manufacturing ware by machinery.—After long and close investigation, labor and experiment, they perfected a machine for turning ware, to be carried either by steam or water power. It was patented in July, 1847. In witnessing the two processes of making ware, while in Middlebury, we could not resist the conclusion that this invention must produce a complete revolution in the manufacturing processes.

It operates beautifully, making an extremely neat and smooth article of ware. The cost of manufacture, by machinery, is one-half that by the old process: while the ware commands an advance of 20 per cent. readily, on old prices.

The right to make ware for the State of New York, by the new process, was sold to a gentleman in New York City, by the Messrs. Merrills. Owing to defects in his machinery or the unskillfulness of his workmen, he has turned out some defective ware. There has not been the slightest difficulty here. All the ware that can be made by Messrs. Merrill, and their associates has been contracted for at an advance of 20 per cent on old prices.

Two hundred thousand bottles are made annually at the factory of Messrs. E. H. & C. J. Merrill. The article they make, is capable of bearing a much greater pressure than the round bottles, and is in great demand in Buffalo and other places where it has been tried, on that account. Six of them are made per minute.

The inventive genius of our friends, Merrills, cannot fail of its reward. They deserve the good fortune and honor that awaits them: if ever enterprise and industry merited reward.

The right to make stone-ware by machinery, has been visited in Col. R. McMillen, of Middlebury, by the inventors. Col. M. has opened a large factory for the manufacture of the ware generally, and has some of the machines in successful operation.—He is making pots, pans, etc., and is satisfied that every variety of stone work can be made by the same process, without difficulty. He is making now only about 5000 gallons per week; but when his extensive water power is fully applied to the work, he will turn out a heavy stock of ware. He has contracted for all he can make for one year, at a substantial advance on old prices. His extensive buildings are situated so as to admit of canal boats reaching them after a slight improvement has been made.

Plank Roads.

The following is an extract from a letter of Thos. C. Alvord, Esq., of Salina, to a gentleman of this city, on the subject of Plank Roads. The enlarged and enlightened experience of Mr. Alvord, on this subject, renders his opinions of peculiar value:—*Det. Free Press.*

"I think illy of the project of laying a plank road in the centre of the road-way, under any circumstances. First, because you would, in that event, have to lay the plank level crosswise, whereas it is of the utmost importance to have a slant of at least 2

inches from the inside to the end of the plank track. Actual experience has demonstrated that the present utility, and the elevation of the road, is at least, (if not more than) double. Secondly, in wet weather especially, the one wheel running off on the dirt track, finds less resistance to cutting than the other; consequently, the weight of the load being thrown entirely on that wheel, must necessarily increase the weight of the draft, and soon cause the dirt track to rut up and need repair.

We have now changed our form of stringers and manner of laying them. We now use 3 x 6 on ordinary good ground; 3 x 8 on light soil, and on very wet and mucky soil, we lay two set; breaking joints as it is termed, in this way. We also lay them 5 feet apart, from inside to inside. One inch broad or even 2 inch plank are not heavy enough for sleepers; it is impossible to lay them so as to form a lengthwise perfect plane; which is very desirable, neither do they add much to the strength of the road; the objection urged to have heavy sleepers, of acting as a dam to the water, amounts to nothing, upon the new plan of laying the road with a slant, as our experience teaches us, that a road laid in that way sheds or throws the water off the track, and none gets under the plank to its great detriment. We have a road of twelve miles in extent, which has gone through two winters; built over bad ground, and it has not stirred a particle, nor have we been as yet subject to an expense of 25 dollars for repairs.

We have brought our sleepers from 7½ feet apart from inside to inside, for the reason that we found our roads under the old plan were apt to be depressed in the centre, the entire weight being thrown inside the sleepers, thereby causing the water to be retained in the centre till it could find its way through, to the injury of the road, now by being placed directly under the wheels, they obviate this difficulty as experience, (that best of teachers,) has taught us.

I know of no other hints or new matter which I could give you, other than you will find in my letter to your brother under the date of April, 1848; but I again take this opportunity of impressing upon you the necessity of thorough and efficient drainage; build your roads high, with sufficient roll to quickly carry off the surface water, dig your ditches deep and you will have a good, permanent, lasting road.

In answer to your last inquiry; about my opinion in reference to the utility and advantage of these roads; whether I continue to think as favorable in regard to them, I say yes—my opinion is that the value of lumber has got to increase three fold before they will cease to be rebuilt, when necessary, wherever they have been once built. This is not my opinion alone, it is the universal sentiment.—Two thousand miles are finished or in progress now in this State, and new companies are forming daily, and new lines are being laid out. The faster they wear out, the more profit, and consequently the more necessity to the country that they be maintained."

Camel Steam Tug.

The reader will find in our Reading Room an account of the *Camel Steam Tug*, which was sent us by a friend in Charleston. The *Tug* is intended—first, for carrying vessels over bars and shallows; secondly, for towing vessels; thirdly, for hauling stranded vessels off shore, which would otherwise sink, and transporting them with as perfect safety as they could any other vessel.

The appearance of the *Camel Steam Tug* on the water, from a lateral view, is like that of a common steamboat. It moves faster when towing, is managed with the same facility, is trimmed at the same draft of water, say nine feet, whether a vessel is in the act of being transported or not. The cost of the *Tug* will be from sixty to seventy-five thousand dollars; and the cost of transporting a vessel about the same that is ordinarily charged by two steamboats. The model is well worth the attention of the curious from its simplicity, beauty of proportions, combination, and adaptation of elements at hand towards so great an end, at once opening all the Southern harbors to vessels of large draft, and with as much ease and facility as common steam-towing is done. The Chief Naval Constructor at Pensacola observes that the great desideratum for Southern waters has at length been obtained in the *Camel Tug*, which combines in the most simple form all the properties required for the subject.

The inventor is J. A. Winslow, 1st Lieut. U. S. Ship *Saratoga*, (address Boston). Model and drawings can be seen at the Pensacola Navy Yard, and any information obtained from the Chief Naval Constructor, Ed. H. Delano.—*Savannah Republican.*

New Mode of Manufacturing Shot.

There are few Northern, Southern, or Western hardware merchants unacquainted with the celebrated manufacturing firm of T. Otis Leroy & Co., 261 & 263 Water-street. As it is the only establishment in our country, we believe, where lead pipe is manufactured by a new and superior process, which entirely obviates the old one, of seaming or bridging the same, more of that article is sold by this company than by any other in our Union. During a recent visit we were highly gratified in witnessing the operation of a new mode of manufacturing shot without the aid of the usual tower employed for that purpose, and must confess that we were surprised that this important improvement, embracing such vast advantages, was never before thought of. It is the invention of the junior partner of the firm, Mr. Smith, to whom the exclusive right has been invested by letters patent, both in this country and in Europe. Its distinguished features consist in the simplicity with which the lead, after being dropped from a perforated vessel in a fluid state, is congealed before reaching the reservoir of water into which it is deposited. This is performed in the ordinary process by causing the drippings of lead to fall a great distance from the top of a tower to its base, and up to the period of this beautiful invention, no other substitute for the tower could be devised to accomplish this indispensable object in the manufacture of shot, although various attempts have heretofore been made. The mode adopted by Mr. Smith is simply to cause the fluid lead to descend from the upper part of the establishment through an upright circular pipe arranged over a reservoir of water, and in which a strong blast of air, produced near its lower extremity by a revolving fan, is constantly passing in such a manner as to meet the lead drippings in their descent; and while it tends to break their fall by slightly buoying them up, imparts to them a degree of cold sufficient to change their state, from a liquid to a solid, before they reach the reservoir of water into which they fall, and from which they are taken to the drying table by an endless band of buckets or elevators. When it is understood that this simple process performs the office of the expensive towers and their complicated adjuncts now in use, we think the reader will agree with us in the opinion that the immense shot towers now seen peering to the skies in the various large cities of our country, will ere long be numbered among the things that were, to give place to this evidence of the advancing tide of the inventive genius of our country. In addition to the advantages gained in labor, &c., in the process of manufacture by the improvement, the shot produced by it are more solid and otherwise superior to those heretofore placed in market.

We likewise witnessed some fine samples of lead pipe of all sizes both in length and bore, manufactured by a machine arranged at the back part of the building, receiving its power from a hydraulic or Bramah press. The apparatus forced the pipe over a mandril with great facility, and we were informed that it was capable of producing a pipe of an indefinite length; and from the fact of having the mandril over which the pipe is forced secured at its lower end without the aid of a bridge, it was not so likely to get out of order as the usual construction of machinery.—*N. Y. Pathfinder.*

ALBANY AND BUFFALO RAILROADS.—

Four Trains daily, Sundays excepted, viz: Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m. Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours. Arrive from Buffalo, 7 p.m., 2½ a.m., 12½ m., 3½ p.m. Passengers by the *Express Train* reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For *Schenectady, Saratoga Springs & Whitehall*, Leave Albany at 7 a.m. and 2 p.m. For *Schenectady* only at 6, 7 and 9 a.m. and 12½, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The *Eastern Trains* leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage free between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y
Albany and Schenectady Railroad Co.
Albany, August, 1849.

Large Wooden Pumps.

SEVERAL Large Wooden Square Pumps, of various sizes from 6 to 24 inches, and lengths from 10 to 25 feet, strongly bolted and strapped together with wrought iron; and used to great advantage on the Boston Water works; also two screw pumps each 25 feet long and 24 feet in diameter, are now for sale by the Boston Water Commissioners.

For further particulars inquire at No. 119 Washington Street, Boston, or of E. S. CHESBROUGH, West Newton.

June 8, 1849.

P. S. DEVLAN & CO's Patent Lubricating Oil.

THE Subscribers invite the attention of Railroads, Steamboats, Machinists, etc., to the above article of Oil; they are prepared to supply it in any quantity. Certificates of its superiority over all other oils, from several of the largest Works and Railroads, can be seen at our office.

KENNEDY & GELSTON,
54 Pine street, New York.

Sole Agents for the New England States and State of New York. ly14

Steam Boiler Explosions.

THE Subscriber having been appointed sole Agent for Faber's Magnetic Water Gauge, is now ready to supply the trade, and also individuals with this celebrated instrument. Besides the greatest safety from explosion resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow off." Pamphlets containing full information, can be had free on application to the Agent,

JOSEPH P. PIRSSON,
Civil Engineer, 5 Wall st.

Journal of the Franklin Institute of the State of Pennsylvania, for the Promotion of the Mechanic Arts.

The oldest Mechanical Periodical extant in America, is published on the first of each month in the City of Philadelphia. It has been regularly issued for upwards of twenty-three years, and is carefully edited by a committee of scientific gentlemen appointed for the purpose, by the Franklin Institute.

The deservedly high reputation, both at home and abroad, which this Journal has acquired and sustained, has given it a circulation and exchange list of the best character, which enables the Committee on Publications to make the best selection from foreign Journals and to give circulation to original communications on mechanical and scientific subjects, and notices of new inventions; notices of all the Patents issued at the Patent Office, Washington City, are published in the Journal, together with a large amount of information on Mechanics, Chemistry, and Civil Engineering, derived from the latest and best authorities.

This Journal is published on the first of each month, each number containing at least seventy-two pages, and forms two volumes annually of about 432 pages each, illustrated with engravings on copper and on wood of those subjects which require them.

The subscription price is Five Dollars per annum, payable on the completion of the sixth number; and it will be forwarded free of postage when five dollars are remitted to the Actuary (postage paid) in advance for one year's subscription.

Communications and letters on business must be directed to "the Actuary of the Franklin Institute, Philadelphia, Pennsylvania," the postage paid.

WILLIAM HAMILTON,
Actuary, F. I.

Engine and Car Works, PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of \$250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON,
Superintendent.

JAMES C. CHURCHILL,
General Agent and Clerk.

The New York Iron Bridge Co.

LATELY KNOWN AS
Rider's Patent Iron Bridge Co.

THE Company which has hitherto furnished these Bridges, under the patent granted to the late Nathaniel Rider, deceased, have become satisfied that all the principles embraced in their construction, are included in a previous patent, granted in the year 1839, to Col. Stephen H. Long, of U. S. Engineers, and by him designated as "Long's Suspension Bridges," and have therefore made an arrangement with Col. Long, by which they have secured the exclusive right to make and vend these Bridges throughout the whole United States.

The only change consequent upon the new arrangement will be found in the name and style of the Company. The parties composing it being the same, the construction of the Bridges will be essentially the same. August 4th, 1849.

M. M. White, Agent,
No. 74 Broadway, New York.

NOTICE TO Superintendents of Railroads.

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, Superintendents, and all others interested in the subject.

(COPY.)

UNITED STATES PATENT OFFICE, }
Washington City, D.C., April 28th, 1846.

SIR: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully,
EDMUND BURKE,
Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York. 34tf

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

To Contractors.

BLUE Ridge railroad.—Proposals will be received by the undersigned at his Office in Brooksville, Albernarle county, Va., until the 1st of October next, for the construction of the tunnel through the Blue Ridge, together with the deep cut and embankment connected therewith at each end.

The tunnel will be 4,260 feet long, 16 feet wide and 20 feet high, with a ditch on each side: it will slope eastwardly at the rate of 66 ft. to the mile, and pass 700 feet below the top of the mountain.

Proposals will be received either for the whole or for one-half, it being distinctly stated, in this case, whether the Eastern or Western half is bid for.

Proposers are requested to examine the localities before bidding, and will obtain from the undersigned all necessary information.

The payments will be CASH, with a suitable reservation till the completion of the contract. The best testimonials and an energetic prosecution of the work will be expected.

Printed forms of proposals will be furnished on application to the undersigned.

By order of the President and Directors,
C. CROZET,
Engineer Blue Ridge Railroad.

Brooksville, July 26, 1849.

Notice to Contractors.

OHIO AND PENNSYLVANIA RAILROAD. PROPOSALS will be received at the office of the Ohio and Pennsylvania Railroad Company, in the town of Massillon, Stark county, Ohio, until sunset of Friday, the 28th of September, 1849, for the Grading and Masonry of the line between Canton and Wooster, a distance of about 32 miles. Proposals may be addressed to Wm. Robinson, Jr., President, or Solomon W. Roberts, Chief Engineer of the company.

Drawings and specifications of the work to be let will be exhibited at the office in Massillon, for a week before the letting, by Jesse R. Straghan, the Resident Engineer of the Western Division.

By order of the Board of Directors.

WM. ROBINSON, Jr., President.
Pittsburg, August 11, 1849.

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and warranted to perform well. Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price \$1,500.

Address J. B. MOORHEAD,

Frazer P.O., Chester county, Pa.

P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia. September 6, 1849.

Patents for Inventions.

THE Subscriber offers his services for the procuration of Patents in the UNITED STATES; in the CANADAS and other British Colonial possessions; in the SPANISH, FRENCH and other WEST INDIES.

ALSO IN EUROPE.

ENGLAND WITH COLONIES; SCOTLAND and IRELAND. FRANCE, BELGIUM HOLLAND, etc.

The foreign patents are procured through special agents, established by, and solely responsible to this establishment. At this office may be obtained all documents required in patent business; *Deeds, Conveyances, Agreements, Assignments, etc.* Counsel given on questions involving points of law in Contested Cases, and written opinions, on the title claims, etc., where the validity of a Patent is questioned.

MECHANICAL ENGINEERING DEPARTMENT.

Drawings of all kinds furnished to parties who wish to prosecute their own patent business. Accurate working drawings for Pattern Makers or for making Contracts with Manufacturers; calculations and drawings made, for constructing difficult and complicated machines or parts of machines. Draughtsmen furnished to take Drawings of Mills, Mill Sites, and Machinery, in any part of the country.

Pamphlets, containing full information on the above subjects, furnished gratis.

JOSEPH P. PIRSSON, Civil Engineer,
Office, No. 5 Wall St.

ENGINEERS.

Arrowsmith, A. T.,

Buckfield Branch Railroad, Buckfield, Me.

Banks, C. W.,

Engineer's Office, Southern Railroad, Jackson, Miss.

Berrien, John M.,

Michigan Central Railroad, Marshall, Mich.

Buckland, George,

Troy and Greenbush Railroad.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Davidson, M. O.,

Eckhart Mines, Alleghany Co., Maryland.

Fisk, Charles B.,

Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,

Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,

South Oyster Bay, L. I.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.
Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

Holcomb, F. P.,
Southwestern Railroad, Macon, Ga.

Higgins, B.,
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.,
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,
Androscoggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukee, Wisconsin.

BUSINESS CARDS.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Cruse & Burke,
Civil Engineers, Architects and Surveyors,
Office, New York State Institution of Civil Engineers,
STATE HALL, ALBANY, N. Y.
Drawings, specifications and surveys accurately executed. Pupils instructed theoretically and practically at a moderate premium.
May 26, 1849.

Eaton, Gilbert & Co.,
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Hudson River Foundry,
THOMAS & COLLINS,
130 Quay Street, Albany.

To Railroad & Navigation Cos.

Mr. M. BUTT HEWSON, *Civil Engineer*, offers his services to Companies about to carry out the survey or works of a line of Navigation or Railroad. He can give satisfactory references in New York City as to his professional qualifications; and will therefore merely refer here to the fact of his having been engaged for upwards of two years conducting important Public Works for the British Government.
Communications will find Mr. Hewson at the office of the Railroad Journal, 54 Wall Street, New York.

J. T. Hodge,
Eagle River P. O. Lake Superior.

James Laurie, Civil Engineer,
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.
Railroad Routes explored and surveyed. Estimates Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

To Railroad Companies.
—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,
Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.
May 16, 1849.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July 27, 1849.

IRON.

Railroad Iron.
THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month. Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burtt, J. & J. Rogers, Saltus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Atwater, etc., etc.
FRANKLIN TOWNSEND & CO.
Albany, August 18, 1849.

Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp. They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.
March 29, 1849. 3m.13

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head from the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes 1837 be had at 17 prices, of Erastus Corning & Co Albany; Menitt & Co., New York; E. Pratt & Co., Baltimore Md

LAP-WELDED WROUGHT IRON TUBES

FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.
These are the ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers
THOMAS PROSSER,
Patentee.
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.
THOMAS B. SANDS & CO.,
22 South William street,
New York.
February 3, 1849.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Wear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

THE NEW JERSEY IRON CO'S WORKS AT Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to J. F. MACKIE,
Nos. 85 and 87 Broad St.
New York, June 8, 1849.

Railroad Iron.

OF approved T patterns, weighing 56 to 60 lbs. per lineal yard, made by the best English manufacturers, and under our own specification and inspection. In store and to arrive. For sale by
DAVIS, BROOKS, & CO.,
68 Broad street.
New York, June 1, 1849.
The above will favorably compare with any other rails.

Railroad Iron, Pig Iron, &c.
600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2 1/2 by 4 Flat Bars.
25 Tons of 2 1/2 by 9-16 Flat Bars.
100 Tons No. 1 Gartscherrie.
100 Tons Welsh Forge Pigs.
For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., Philadelphia

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,

HAVING THEIR

IRON FOUNDRY AND MACHINE SHOP

In complete operation, are prepared to execute faithfully and promptly, orders for Locomotive or Stationary Steam Engines, Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,

Slide, Hand or Chuck Lathes,

Machinery for cutting all kinds of Gearing.

Hydraulic, Tobacco and other Presses,

Car and Locomotive patent Ring Wheels, warranted,

Bridge and Mill Castings of every description,

Gas and Water Pipes of all sizes, warranted,

Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

Old Machinery Renewed or Repaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to

COOPER & HEWITT, Agents.
17 Burling Slip, New York.

October 30, 1848.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address **J. F. WINSLOW, Agent,** Albany Iron and Nail Works.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Pudding Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Railroad Iron.

RAILROAD IRON & LOCOMOTIVE TIRES imported to order, and constantly on hand, by **A. & G. RALSTON,** 4 South Front St., Philadelphia.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, ALbany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**

Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.

November 6, 1849.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted.

Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by **WM. JESSOP & SONS,** 91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1849.

Railroad Iron.

100 Tons 2½ x ½, 30 Tons Railroad.

All fit to re-lay. For sale cheap by

PETTEE & MANN,
228 South St., New York.

May 16, 1849.

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc., by

JOHN A. ROEBLING, Civil Engineer, Pittsburgh, Pa.

These Ropes are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

Iron.

THE Works of the New Jersey Iron Company at Boonton, N. J., having been recently enlarged and put in good repair, the company are prepared to receive orders for Iron, which will be executed with dispatch; and they warrant their iron equal in quality and finish to any in this country.

½ Round and square, to 6 inches.

½ Flat 4 "

Ovals, half-ovals and half-round.

Hoop, band and scroll iron.

Nail plates, superior charcoal Horse shoe,

Iron, sheet and Boiler iron.

Tire iron for locomotives,

Railroad spikes.

Pig iron of superior quality for chilling.

do, for foundry purposes.

For sale by **JOHN F. MACKIE,** 85 & 87 Broad Street,
Sole agent for the New Jersey Iron Co,
June 9, 1849.

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,

No 57 South Gay St., Baltimore, Md.,

Offer for sale, Hot Blast Charcoal Pig Iron made at the Caloclin (Maryland), and Taylor (Virginia), Furnaces; Cold Blast Charcoal Pig Iron from the Cloverdale and Catarba, Va., Furnaces, suitable for Wheels or Machinery requiring extra strength; also Boiler and Flue Iron from the mills of Edge & Hilles in Delaware, and best quality Boiler Blooms made from Cold Blast Pig Iron at the Shenandoah Works, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and Rolled and Hammered Bar Iron furnished at lowest prices. Agents for Watson's Perth Amboy Fire Bricks, and Rich & Cos. New York Salamander Iron Chests. Baltimore, June 14, 1849. 6 mos

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

American and Foreign Iron. FOR SALE.

300 Tons A 1, Iron Dale Foundry Iron.

100 " 1, " " "

100 " 2, " " "

100 " " Forge " "

400 " Wilkesbarre " "

100 " "Roaring Run" Foundry Iron.

300 " Fort " "

50 " Caloclin " "

250 " Chikiswalungo " "

50 " "Columbia" "chilling" iron, a very superior article for car wheels.

75 " "Columbia" refined boiler blooms.

30 " 1 x ½ Slit iron.

50 " Best Penna. boiler iron.

50 " "Puddled" " "

50 " Bagnall & Sons refined bar iron.

50 " Common bar iron.

Locomotive and other boiler iron furnished to order.

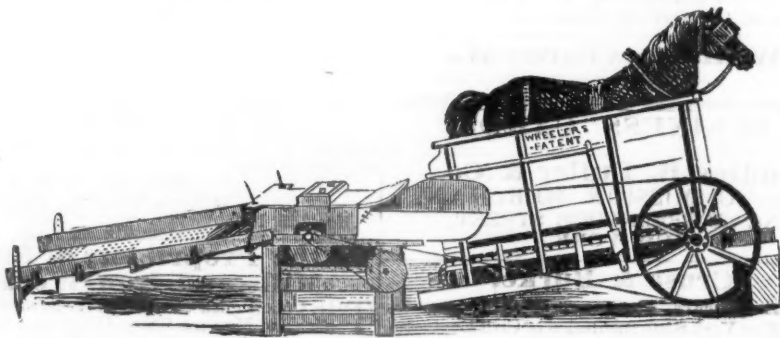
GOODHUE & CO.,

64 South street

New York.

Roman Cement,

OF the best quality, now landing from ship Hendrick Hudson, from London, made by Billingsley, Mial & Co., and superior to anything of the kind manufactured in England. For sale by **G. T. SNOW,** 109 Water Street, New York.

Railroad Horse Power and Saw Mill.

The above cut represents the most simply constructed Endless Railway Power in use. As shown it is attached to a threshing machine, with which it is most extensively used; but for sawing wood at railroad stations it has no superior. The saw mill which accompanies it is simple, cheap and convenient. The single power by the weight of the horse at the elevation of one and a half inches to the foot—the horse weighing eleven hundred pounds—is capable, with the attention of at most three men, of sawing twice in two from 12 to 20 cords of four foot wood per day. They have been used several years on several roads in New England, and for manufacturing establishments more than three thousand of these powers are in use, and without exception have given universal satisfaction. Their principal advantage is, their great simplicity: the full speed being obtained with simple rack and pinion, without intermediate gearing. They are warranted to give satisfaction as above described, or may be returned at my expense, and the purchase money refunded.

HORACE L. EMERY,

Nos. 469 & 371 Broadway, Albany, N. Y.

September 6, 1849.

Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants, Banks and Jewelers use. The subscriber manufactures and has constantly on hand, a large assortment of Iron Safes, of the most approved construction, which he offers at much lower rates than any other manufacturer. These Safes are made of the strongest materials, in the best manner, and warranted entirely fire proof and free from dampness. Western merchants and the public generally are invited to call and examine them at the store of E. Corning & Co., sole agents, John Townsend, Esq., or at the manufactory.

Each safe furnished with a thief-detector lock, of the best construction.

Other makers' Safes repaired, and new Keys and Locks furnished at the shortest notice.

H. W. COVERT,
cor. Steuben and Water sts. Albany.
August 24, 1848.

TO RAILROAD COMPANIES AND MANUFACTURERS OF Railroad Machinery. The subscribers have for sale American and English Bar Iron, of all sizes; English Blister, Cast, Shear and Spring Steel; Juniata Rods; Car Axles, made of double refined iron; Sheet and Boiler Iron, cut to pattern; Tires for Locomotive Engines, and other railroad carriage wheels, made from common and double refined B. O. Iron; the latter a very superior article. The Tires are made by Messrs. Baldwin and Whitney, Locomotive Engine Manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND, Philadelphia.

Prest. Beaver Meadow Railroad & Coal Co., Philadelphia.

or, L. CHAMBERLAIN, Sec'y, at Beaver Meadow, Pa.

May 19, 1849.

India-rubber for Railroad Cos.

RUBBER SPRINGS.—*Bearing and Buffer—Fuller's Patent.*—Hose from 1 to 12 inches diameter. Suction Hose. Steam Packing—from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street.
New York, May 21, 1849.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS,
Reading, Pa.

Large Pumps.

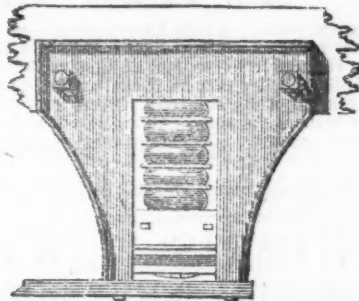
THE Boston Water Commissioners offer for sale a large number and variety of Wooden Square Pumps, used in clearing excavations from water during the construction of the Aqueducts.

Also Two Large Screw Pumps, each 25 feet long and 24 feet in diameter.

For further particulars, enquire at the office of the Water Commissioners, 119 Washington St., Boston, or of E. S. Chesbrough, West Newton.

May 19, 1849.

6w20

Patent India-rubber Springs.

FULLER & CO. beg that parties interested in the use of these Springs will not be misled by exparte statements, but will examine the actual Patents and judge for themselves.

The statements made by Messrs. Crane & Ray shall be treated seriatim.

They claim to have first introduced India-rubber Springs about two years since, whereas they were used by Fuller & Co. nearly four years ago.

They claim the exclusive right to use Springs. They have no right whatever; every spring they make is an infringement upon Fuller's patent, dated 1845. They claim the sole right to make India rubber, and apparently think because a species of India-rubber was patented some years since, that no person can make any other now. A patent was granted in January last to Messrs. Tyer & Helm for a new and improved kind of Vulcanized rubber which is used by Fuller & Co.

Fuller's springs it is needless to say are in very general use, although Messrs. Crane & Ray pretend that they know of only one or two instances. Fuller & Co. guarantee all parties who use their springs.

As to the Legal proceedings—an action has been commenced against one company for an alleged infringement of Goodyear's patent, but is being defended with every prospect of success. An action has also been commenced by Fuller & Co., against parties for an infringement of Fuller's patent, and this will be done in every case of violation.

In every case in which Fuller's spring has been applied, it has been pronounced superior to that made by Mr. Ray, and this fact induces Messrs. Crane & Ray to claim the right of using it. They attempt to lead the public from the real question at issue, by producing a Deposition as to Mr. Ray having tried to make a spring which Mr. Fuller did make and patent. If Mr. Ray did invent a spring in 1844, why did he not apply for a patent, and not wait until 1848, when his application was rejected!

Mr. Kneivitt has never stated that the springs were put on by him, which are referred to in Mr. Hale's article, but he does state that those springs are made according to Mr. Fuller's specification, and consequently are an infringement upon it. The article of Mr. Hale in the Boston Advertiser, quoted by Messrs. Crane & Ray, was followed immediately by a letter in the same paper, from Mr. Kneivitt, setting forth the facts of the case.

The springs referred to were put on by Mr. Ray before Mr. Kneivitt came to the United States; when he arrived he gave Mr. Ray notice not to proceed further in making or vending such springs; Mr. Ray then said he did not wish to infringe, and would not continue to do so, and he then contrived an India-rubber and Air spring which totally failed.

In the selection of their first agent, Fuller & Co. were particularly unfortunate, and their reason for advertising to it is simply that it may tend to throw light on subsequent transactions, and furnish a reply to the remark, "that this opposition was invited by their own delay in getting the thing to work." The individual referred to undertook the agency for Fuller's springs, and left Liverpool on the 1st January, 1847, furnished with a complete set of drawings, models, etc., and every necessary instruction to make arrangements respecting the supply of material, and to have it at work within the time limited by law; but from that hour to the present, not a single communication has been received from the said agent. Some of their models,

however, they have traced into the hands of parties now seeking to invade their rights, and by whom they understand they have been exhibited as specimens of their own invention.

The superiority of Fuller's spring is implied in the offer of the New England Car Co. to make springs upon his principle (now that a preference is given to the disc and plate form) and this notwithstanding the fact, that Fuller & Co. have a patent; and that Mr. Ray's application for one was rejected. The public can judge which company's course has been the most honorable, or whose statements are entitled to consideration.

Fuller's springs can be obtained of Mr. Kneivitt the Agent, at 39 Broadway New York, and of Messrs. James Lee & Co., 18 India Wharf, Boston.

May 26, 1849.

C. W. Bentley & Co.,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Plowman Sts., near Baltimore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupy but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose; where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fittings for Steam, Water, Gas, etc., constantly on hand, Baltimore, June 6, 1849.

PHILADELPHIA CAR MANUFACTORY,
CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day. Philadelphia, June 16, 1849. 1y25

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by

JOHN W. LAWRENCE,

142 Front-street, New York.

Orders for the above will be received and promptly attended to at this office. 32 ly.

Text Book of Mechanical Drawing,

FOR the use of SCHOOLS and SELF-INSTRUCTION, containing,

1st. A series of progressive practical problems in Geometry, with full explanations, couched in plain and simple terms; showing also the construction of the parallel ruler, plane scales and protractor.

2d. Examples for drawing plans, sections and elevations of Buildings and Machinery, the mode of drawing elevations from circular and polygonal plans, and the drawing of Roman and Grecian Mouldings.

3d. An introduction to Isometrical drawing, with 4 plates of examples.

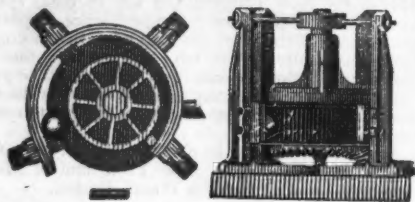
4th. A treatise on Linear Perspective, with numerous examples and full explanations, rendering the study of the art easy and agreeable.

5th. Examples for the projection of shadows. The whole illustrated with 50 STEEL PLATES.

Published by WM. MINIFIE & CO.,

114 Baltimore St., Baltimore, Md.

Price \$3, to be had of all the principal booksellers.

MACHINERY.**Henry Burden's Patent Revolving Shingling Machine.**

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED, the Original Inventor of the Plate Wheel with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country.

A. T.
Kensington, Philadelphia Co.,
March 12, 1849.

ENGINE AND CAR WORKS.**DAVENPORT & BRIDGES,**

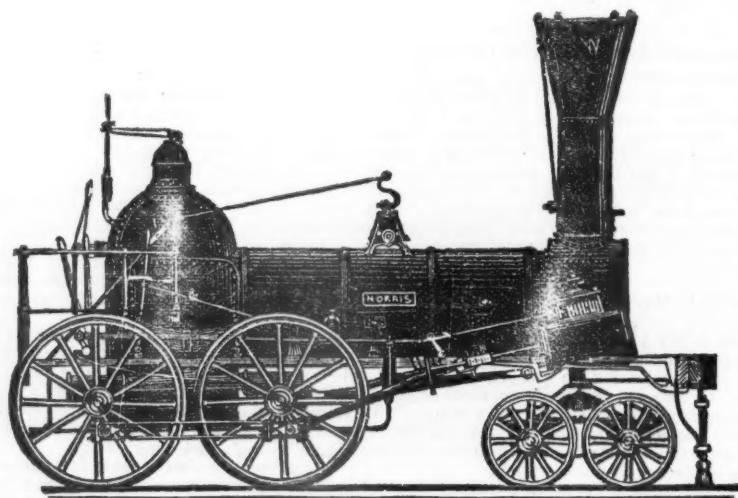
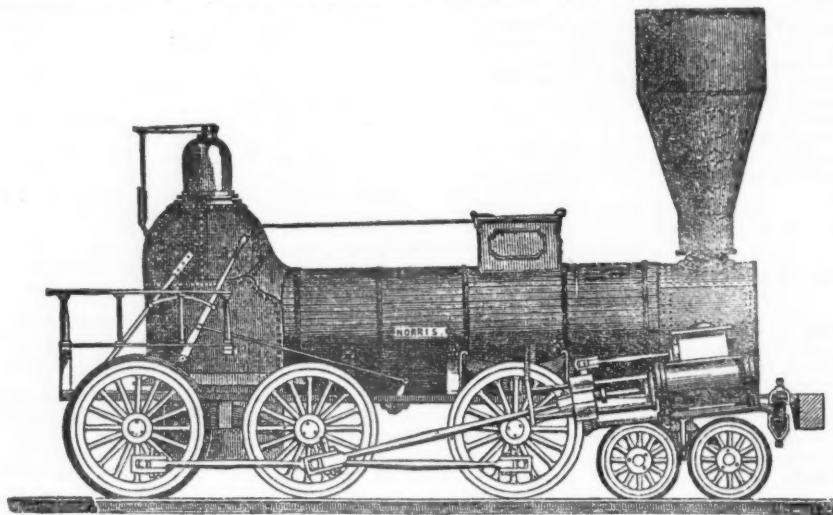
HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds—including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.